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OISE's Magazine for Schools

VOL. 37, NO. 2 & 3, 2008

THE BEST OF OUR HISTORY

Highlights from
40 years of
Orbit Magazine!

SECTIONS INCLUDE:
- The Interviews
- Critical Views
- Classroom Practice
- The Calls to Action

HONORARY GUEST EDITORS:
Heather Berkeley
Hugh Oliver
EDITED BY:
Jennifer Sipos-Smith

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Ontario Institute for Studies in Education
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OISE'S MAGAZINE FOR SCHOOLS

1969 – 2008

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VOLUME 37, NUMBER 2 & 3, 2008

The Best of Our History

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Hugh Oliver

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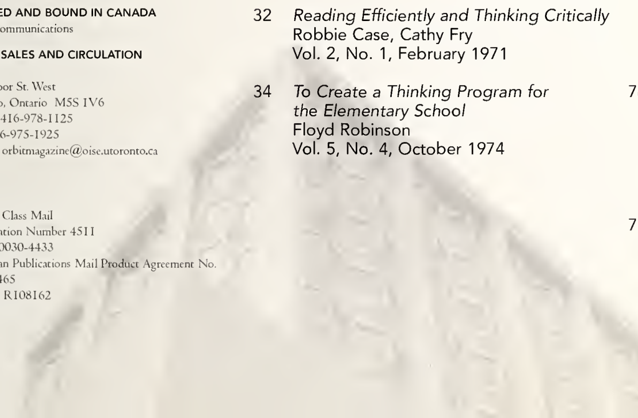

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Raising Student Achievement

HONORARY GUEST EDITORS

Heather Berkeley worked at OISE for 23 years in various communication roles, including that of editor of *Orbit*. She took early retirement from OISE in March 2006 to serve as the Coordinator of Publications and Resources for the Literacy and Numeracy Secretariat, Ontario Ministry of Education. Over her career, Heather has written, edited, and produced hundreds of resources—in print, online, and on DVD—for both the education community and the general public, on all aspects of education, from research findings to professional development strategies.

Hugh Oliver, professor emeritus in the Department of Adult Education and Counselling Psychology at OISE, is former editor of *Orbit*, editor-in-chief of the OISE Press, managing editor of *Interchange* and co-editor of *News and Notes*. Hugh was born in England in 1929. He was a Shell scholar at Keele University and a Research Fellow with the Nuffield Science Project where he produced chemistry background books for students. Hugh has taught stone carving at Xinjiang Art College in Western China and was recently offered a recording contract as a singer/songwriter with Orange Lounge, a branch of Universal Records.

MESSAGE FROM JANE GASKELL

Dean, Ontario Institute for Studies in Education (OISE)

I am pleased to introduce *The Best of Our History*, Volume 37, Issues 2 & 3 of *Orbit Magazine: OISE's Magazine for Schools*. In these pages we celebrate the best of *Orbit*, and highlight some of the discussion of the issues that have mattered in education, locally, provincially and nationally over the past 40 years. It celebrates some of *Orbit*'s most memorable contributions in four sections: The Interviews, Critical Views, Classroom Practice and Calls to Action. This commemorative issue is the last print issue of the magazine. We will continue to enhance our knowledge mobilization strategy by regularly publishing research and making back issues and articles of *Orbit* available online. Please continue to visit us at www.oise.utoronto.ca, as these and other new initiatives unfold.

Orbit was conceived soon after the Ontario legislature established OISE as a graduate school of education in 1965. OISE's director R.W.B. Jackson introduced *Orbit* as a vehicle to: "improve the education of our children…encourage frank discussion…offering of new ideas…prove of practical value and foster among educators the spirit of cooperation essential to the attainment of this goal." In October 1969, Hugh Oliver published Preliminary Issue #1. This first issue included Hugh's interview with Wilder Penfield, O.M., C.M.G., President of the Vanier Institute of the Family, internationally renowned for his scientific research into the function of the brain and his skill as a neurosurgeon. We start this collection with that interview.

For nearly 40 years, *Orbit Magazine* continued to foster dialogue and partnerships between researchers and teacher educators, classroom teachers and school administrators, and Ministry and school board personnel on the direction of education and topics of practical significance for education in Ontario. As the practice of education changed over the century, *Orbit Magazine* adapted and evolved. In the current environment, many publications are moving online, and we are following suit, hoping *Orbit* will be more easily available, less expensive to produce yet equally dynamic and interesting.

I would like to thank Hugh Oliver who founded and carried *Orbit* into the early '80s, and Heather Berkeley who took the helm and steered *Orbit* into the 21st century. Both have served as honorary guest editors for this special issue and I know you will enjoy their editorials, in which they both name several of the important contributors to their publications. I would like to thank Carol Rolheiser, OISE's associate dean of teacher education, for being a dedicated critical friend to *Orbit* and for her substantial contributions as guest editor, co-author of articles and professional development pull outs. I would also like to thank members of the standing editorial board for their direction and advice. They include: Barbara Bodkin, David Booth, Kari Dehli, Patricia Goldblatt, Kim Gordon, Linda Grant, Clay Lafleur, Peter Lipman, Tait Luste, Kirk Mark, Pat McAdie, John Myers, Patty Pappas, Carol Rolheiser, and Paul Vanderhelm.

We also owe a debt of thanks to our editorial, production and administrative team. They include our current editor, Jennifer Sipos-Smith, assisted by her associate editor, Dawn Martin, and Gayle Grisdale, who has been responsible for sales and circulation for many years.

OISE's commitment is to ensure the extraordinary synergy between theory and practice continues to grow. I know you will enjoy this special issue and I hope you will continue to look to OISE for more contributions to the issues that matter in education.

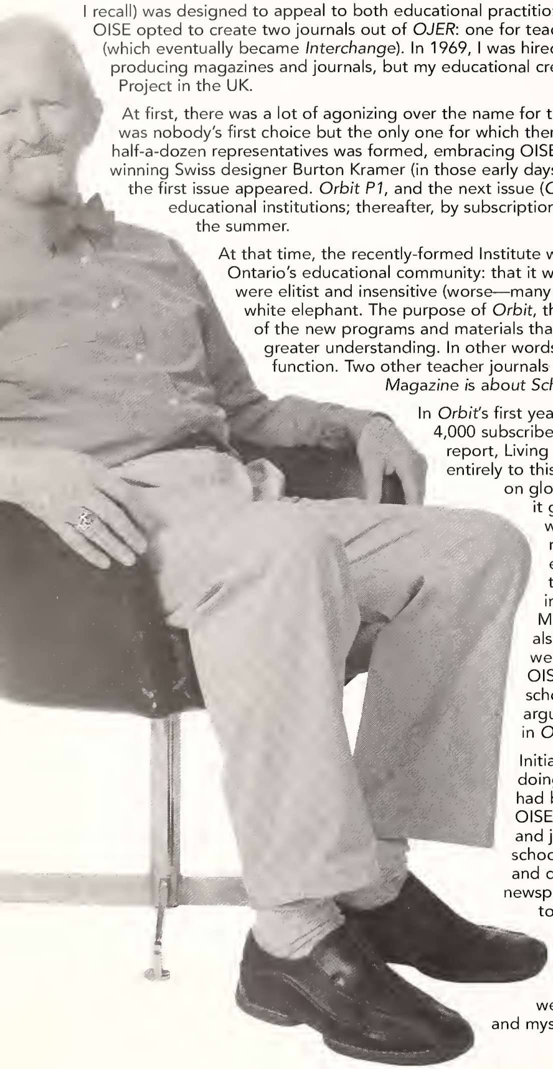
Sincerely,

Jane Gaskell

Jane Gaskell

MESSAGE FROM HUGH OLIVER

Editor of *Orbit* 1969 – 1983



When OISE was established in the mid-'60s, it inherited the *Ontario Journal of Educational Research* (OJER), which (as far as I recall) was designed to appeal to both educational practitioners and educational scholars. The decision-makers at OISE opted to create two journals out of *OJER*: one for teachers (which eventually became *Orbit*) and one for scholars (which eventually became *Interchange*). In 1969, I was hired to produce and edit the teacher journal. I had experience producing magazines and journals, but my educational credentials were confined to the Nuffield Chemistry Teaching Project in the UK.

At first, there was a lot of agonizing over the name for the new journal. *Orbit*, which came to me in the bath, was nobody's first choice but the only one for which there were no rooted objections. A consultant panel of about half-a-dozen representatives was formed, embracing OISE staff and local teachers. I hired the services of award-winning Swiss designer Burton Kramer (in those early days, funds were fairly free to come by), and in October 1969, the first issue appeared. *Orbit P1*, and the next issue (*Orbit P2*) were distributed gratis to Ontario schools and other educational institutions; thereafter, by subscription. I reckoned to produce five issues a year with a break over the summer.

At that time, the recently-formed Institute was the target of a barrage of criticism from quite a few of Ontario's educational community: that it was out of touch with classroom reality; that its academics were elitist and insensitive (worse—many of them were American); and, in general, that it was a costly white elephant. The purpose of *Orbit*, therefore, was not only to inform the educational community of the new programs and materials that OISE was developing, but also to foster cooperation and greater understanding. In other words, *Orbit* had a public relations as well as an information function. Two other teacher journals around at that time were *Monday Morning* and *This Magazine is about Schools*.

In *Orbit*'s first year (and thanks to the impact of novelty), there were over 4,000 subscribers. It was those long-ago, heady times of the Hall-Dennis report, Living and Learning, and *Orbit*'s second issue was devoted almost entirely to this theme. Early issues were lavishly produced and printed on glossy art paper—in retrospect, too glossy perhaps because it gave credence to OISE's then fat-cat image. Contributors were generally a mix of OISE professors writing about their research findings and teachers writing about their classroom experiences; sometimes the professorial prose required translation on our part. In each issue, there was an article in French (a token article some said) in response to Prime Minister Trudeau's bilingual mission; and over the years, we also published some half-a-dozen theme issues. One problem we faced was that there were then about ten departments in OISE, some of which had only limited connections with the school system; and yet the chairpersons of these departments argued that they had as much right to have their voice heard in *Orbit* as any other department.

Initial feedback suggested that *Orbit* was well thought of and doing a useful job. But after a couple of years, after the novelty had begun to wear off, subscriptions began to decline and so did OISE's funds. Increasingly, *Orbit* had to justify its annual subsidy, and justification meant reaching out to the preponderance of schools in the province. However, on looking into production and distribution costs, I determined that were we to switch to newsprint and have the boards of education distribute the journal to schools for us, we could provide a copy free to every school in the province for the same cost we were then paying. So this is what we did. At the same time, we retained a subscription list and in the ensuing years had around 1,000 subscribers. (Incidentally, "we" for the first six years of *Orbit*, were Jean Shapter and myself; and thereafter Ann Nicholson and myself.)

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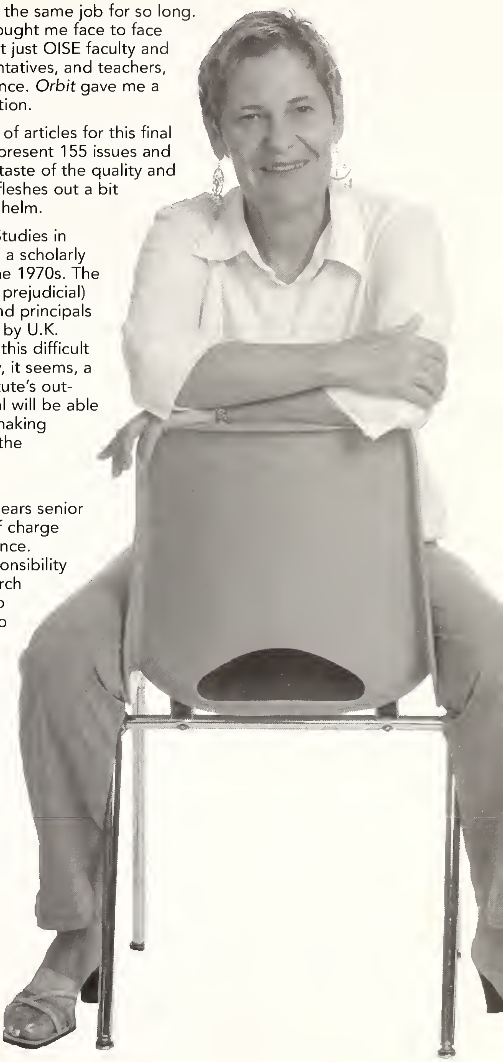
MESSAGE FROM HEATHER BERKELEY

Editor of *Orbit* 1983 – 2006



For 23 years I edited *Orbit Magazine*. Some wondered how I could do the same job for so long. But for many, many years it was the best job in the world for me. It brought me face to face with the people and ideas that drive the Ontario education system, not just OISE faculty and other university researchers, but policy makers and federation representatives, and teachers, principals, consultants, superintendents, and directors across the province. *Orbit* gave me a front seat to Ontario education and at the same time it was MY education.

So many people contributed to *Orbit* over the years that the selection of articles for this final issue has been an impossible challenge. Keep in mind that 40 years represent 155 issues and hundreds of contributors! Hugh Oliver and I could only give readers a taste of the quality and range of the articles that OISE published in *Orbit*. I hope my editorial fleshes out a bit more the people who helped make *Orbit* work during my years at the helm.

In a commemorative issue of the journal for the Canadian Society for Studies in Education (1999), the editors wrote that education was not considered a scholarly endeavour, and hence not eligible for federal research funding, until the 1970s. The people holding the purse strings were obviously drawing a heavy (and prejudicial) line between what scholars in the universities did and what teachers and principals in the "real" world of education did. The early issues of *Orbit*, created by U.K. writer and editor Hugh Oliver, openly—and comically—acknowledged this difficult relationship. In the first issue of *Orbit* Hugh wrote, "There is frequently, it seems, a barrier to communication somewhere along the line between the Institute's out-basket and the hands of the teacher, a barrier that we hope this journal will be able to surmount." For a cynic, Hugh was very optimistic! Finding ways of making educational research relate to classroom practice (and breaking down the research/practice divide) remained *Orbit*'s (and I would add OISE's) primary challenge.

Orbit started out as a subscription-based magazine, but after several years senior administration decided to convert it to a newsprint version sent free of charge to every publicly funded elementary and secondary school in the province. "We have adopted this new policy because we believe we have a responsibility to report to Ontario teachers on the activities of OISE and other research organizations," Hugh wrote in 1972. He also urged teachers to write to *Orbit* with suggestions about the kind of information they would like to have in the journal. "To date, lack of feedback has been our chief problem." The problem was a very long-lasting one.

Hugh hired me to edit *Orbit* in 1983. I really didn't know what I was doing (no criticism of Hugh's hiring...I did have potential!), and several years into the job I was desperate for ideas to reinvigorate the magazine. In 1990, OISE's then director, Walter Pitman, took me aside and told me as kindly as possible there would no longer be a budget for the give-away model. "What would it take," he asked, "to create an OISE magazine that people in schools and school boards would want to buy?"

I had been working with Ian Winchester, a faculty member who edited OISE's journal *Interchange*, on experimental issues called "j-books"—both journal (part of a series) and book (one-off). Ian's j-books on the Chinese education system, on literacy, and on teaching mathematics, were highly successful. I decided to clone Ian's j-book for *Orbit*.

What if each issue of *Orbit* focused on a single theme that would help people cope with all the changes in education—new curriculum, new assessment policies, new demographics of student populations? I wasn't expert enough to create targeted tables of contents, but I was surrounded by people who were. OISE faculty could be the guest editors of *Orbit* j-books! And, boy, did they love that idea. And so did I! It made me so much more successful and with less pressure and work!

continued on page 6

Message from Hugh Oliver continued...

In 1974, we sent a questionnaire to all Ontario school principals inviting their comments about *Orbit*. Some 1,100 replied: 997 positive and 108 negative—positive enough to ensure continuation of the subsidy. And so the years went by, and every couple of months another issue went to press. However, no longer was *Orbit*'s public relations function of such importance because what increasingly established OISE as a valuable component of Ontario's educational system was, and still is, its graduate studies programs; and with the passing of the years, more and more OISE graduates have come to occupy teaching positions across the province and have become supporters of the Institute. Since the beginning, OISE has enjoyed an international reputation. Nowadays, OISE is well thought of at home, too.

In the early '80s, following the death of incumbent John Main, I was appointed Editor-in-Chief (not a title I especially liked) of OISE Press. By then, as well as *Orbit*, I was managing editor of OISE's scholarly journal *Interchange* and co-editor of the in-house *News and Notes*, and we took these journals with us when we moved to the Press. Initially, Ruth Sims took over as editor of *Orbit*, followed about a year later by Heather Berkeley.

On reflection, I should perhaps have abandoned *Orbit* somewhat sooner because at the end I was beginning to run a bit short on ideas. I think it is a common fault of editors to stay around too long. Meantime, Heather brought her own flair and ideas to the journal and gave it new life.

As for this issue of *Orbit*, my contribution has been minimal; just a few suggestions for articles from my era. Not necessarily, in my view, "the best," for there were many interesting contributions, but rather, a representative sample. Although I retired in 1994, I still regard OISE as a second home, a place where I feel content and secure. But enough of such sentiment. What is truly amazing is that *Orbit* has survived for close to 40 years. Although the saying goes that it is easier to start a journal than to terminate one, 40 years for an educational journal must be something of a record.

Message from Heather Berkeley continued...

The first *Orbit* j-book was guest-edited by Dave Hunt, who approached me to do a special issue on Teacher Centres and Professional Renewal. Then Ruth Scott, a graduate student at the time, did one on Whole Language and Spelling (spelling is a hotter topic than school violence, I discovered). Ardra Cole created an issue on Support for Beginning Teachers, and another one on the Transition Years. Mick Connelly and members of the Among Teachers Community created one on Reflective Practice (full of cartoons which we had to get copyright for!). Clare Kosnik did one on Primary Education, Ed O'Sullivan did one on Environmental Education, and Jack Miller did one on Holistic Education, and another on the Common Curriculum. In 1994 George Dei did his first issue on Anti-Racism Education, and Stu Auty, who went on to create the Safe School Network, contributed an issue on Safe Schools.

By 1995, *Orbit* was again being read by the audience it was intended for, thanks to these, and many other people.

OISE's merger in 1996 with U of T's Faculty of Education brought new guest editors. The inaugural issue, guest-edited by Michael Fullan and Angela Hildyard, was on the Royal Commission on Learning. It was launched at a forum attended by several hundred school people who heard what the researchers had to say about the issues they were struggling with in schools. David Booth guest-edited several beautiful and now out-of-print issues related to teaching literacy. Larry Swartz and Suzanne Stiegelbauer created a very popular issue on Arts in Education, Linda Cameron and Lee Bartel did one on Music Education, and Barrie Bennett put out an issue on Instructional Intelligence.

Issues by Paula Bourne, Lisa McCoy and Myra Novogrodsky on Gender and Schooling and Justice Marvin Zuker on Legal Issues in Education sold very strongly as did Ken Leithwood's issue on Transformational Leadership. But the one that made the most impact, at least in terms of sales, was Classroom Assessment (2000), guest-edited by Lorna Earl and Clay Lafleur, setting a record of 11,000 copies.

Despite such effort, when the Institute entered its 2003 regime of cutbacks, it looked like *Orbit* might once again find itself on the chopping block. This time it was my then boss Ken Leithwood and colleagues Carol Rolheiser, associate dean of teacher education at OISE, along with Barbara Bodkin and Eleanor Adam in the Continuing Education division, who came to the rescue. Their suggestions on how to make the magazine more relevant to teachers enabled us to stay afloat once more.

First we set up a practitioner-oriented editorial board to direct—and vet—decisions about "hot topics." We introduced a Professional Development insert with ideas on how to use the articles. It was the suggestion of board member John Myers (also the Guest Editor of two issues on curriculum reform) that our content not be entirely Ontario-focused, to include articles from outside Ontario in each issue. And we incorporated a "critical friend"; a person responsible for ensuring each issue was "reader-friendly."

Some of the most popular issues under this latest round of innovations were: the Bully Issue, guest-edited by Larry Swartz; Inclusive Schooling and Anti-Racism Education 2, guest-edited by George Dei and Njoki Wane; and Raising Student Achievement, guest-edited by Avis Glaze, Sonia Ben Jaafar, and John Ross.

Over many years, *Orbit* operated on a shoestring, really, and Dawn Martin, Tracy Choy (BTT Communications) and I worked crazy, irregular hours to churn the issues out on schedule, so a special thanks to them as well.

I have heard through the grapevine that *Orbit* will be reborn as an online publication featuring OISE research in a user-friendly, quick read format. I think that is a fabulous direction. It means that *Orbit*'s struggle over the years to cross the research/practice divide was not in vain, because, in fact, the struggle continues. How can we really speak to people in the field...in the trenches...in the real world?

SECTION ONE: THE INTERVIEWS

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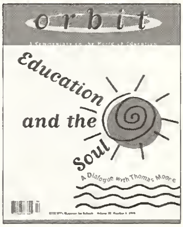

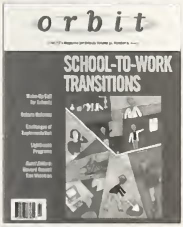

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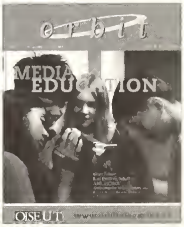


'No one can alter the time schedule of the human brain, not even a psychiatrist or an educator. The built-in biological clock tells the passage of learning aptitudes and the teacher's opportunity'

Conditioning of the Uncommitted Cortex for Language Learning by Wilder Penfield.

an anatomy of

How as a neurosurgeon did you become involved in language study?

Penfield : That's quite easy. Back in 1928, we were working on an operation to cure epilepsy–by removing scar tissue from the cortex or outer covering of the brain.
To ensure that we didn't injure any critical brain functions, we devised a method for localizing these functions in the cortex.
Of all these functions, by far the most indispensable is the major speech area and, though it may sometimes be worth while to forfeit the use of an arm or a leg in order to achieve a cure for epilepsy, sacrifice of the speech area can never be justified. We mapped out the cortical area for speech in hundreds of cases and acquired a precise knowledge of the functional demarcations. Then, some time in the thirties I was asked to give a talk at Lower Canada College in Montreal, and it suddenly occurred to me that here was an interesting extension of my neurological work–into education and especially into the learning of language.

What techniques did you use for locating brain functions?

Penfield : Much of the information has come to us from the work of others, but there was one main technique that we used. Before the operation, the patient was given a local anesthetic ; then a gentle electrical stimulus was applied to the cortex by touching it with an electrode through a trapdoor opening in the skull. From the response of the patient, who was conscious, we were able to map out the general functional areas of the brain very exactly. We were also able to confirm our results from the operations in which there had been actual removal of tissue.

Is this technique of applying an electrical stimulus still in use today?

Penfield : Yes it is–although we can work a little faster these days. In fact, Doctor Rasmussen, the Director of the Montreal Neurological Institute, is studying a case right now.

How closely mapped out are brain functions now?

Penfield : For speech, the cortex is mapped out in detail. We also have a fairly clear understanding of cortical development. For example, in primitive animals the brain areas are much more fully committed at birth either to motor or to sensory functions. But in advanced animals, and especially in man, the brain of the new-born has areas of uncommitted cortex that are, so to speak, like blank pages waiting to be written upon. In man, part of this uncommitted cortex is used for speech and is located in the dominant hemisphere–usually the left. Our experience has been that up to about the age of twelve injury to this area results at first in loss of speech, but speech recovery follows owing to transfer of the speech functions to the uncommitted cortex in the non-dominant hemisphere. After the age of twelve, this transfer does not happen–because the cortex in the non-dominant hemisphere is committed to other brain functions such as perception–and the patient loses permanently his powers of speech.

Is this commitment of brain areas like filling a bottle?

Penfield : Not really, though from the educator's point of view, this is how it might seem. I look on it this way : the mind and the brain must be looked upon as independent. The mind programs the brain as a person programs a computer ; the mind decides to what sort of stimuli attention will be paid. How it does this is another story and is still a very great mystery to us. It is this I have been studying for the past few years.

How do you relate physiological understanding of brain mechanisms to second language learning?

Penfield : I believe the mechanism for first and second language learning is the same. It has become evident that in the brain of a small child a frame is set up for language learning. When a second language is presented, the language fails to fit the first

Dr. Wilder Penfield, O.M., C.M.G., President of the Vanier Institute of the Family, is interviewed by Hugh Oliver, editor of this journal. Dr. Penfield is internationally renowned for his scientific research into the functions of the brain and his skill as a neurosurgeon. He was the Director of Montreal Neurological Institute for twenty-six years, and he is also the author of two historical novels.

Language Learning

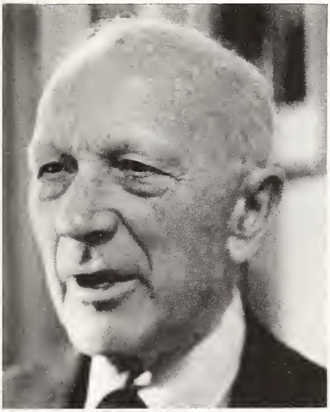
frame and a second frame is set up. Similarly with a third language. This the child accomplishes with ease, and the oft-quoted statement that the child shouldn't be confused in this way is completely false: the sooner he forms a second-language frame, the better. Nor is it simply brain-stimulation evidence that supports this conclusion, but observation supports it too. And in later life, when it comes to learning a third or fourth language, those who learned a second language as children are better equipped to learn another language in the manner of a child.

In Canada, we have plenty of evidence from immigrants of this difference between child and adult learning: the child learns the language easily and perfectly; the old man has a struggle and almost always retains a strong accent.

What support have your ideas received?

Penfield: From educators, they have received considerable support. Psychologists, too, have quite often requested to print my material. About the only contrary opinions have come from people who wish to promote a single language for political reasons.

You have described this method of teaching young children, I believe, as 'the mother's method.'



Penfield: Yes, I have. It is the spontaneous language-teaching method to which the human brain is naturally adapted. By contrast, the dead-language technique used in most of our schools was designed for adults learning Greek and Latin and relies on word lists and grammar. This technique may have its place, but not in the early years when the child is adept at language initiation.

**What about the crash courses currently being used to teach languages to adults?
They are quite successful, I gather.**

Penfield: The difficulty is they apply the mother's method to the adult brain. Often this works but, as results show, it works much better with brains that are already bilingual. The secret of this greater capacity of the bilingual brain to learn a third language appears to be what might be called a 'switch mechanism,' a conditioned reflex whereby the brain unconsciously switches to the appropriate frame for the language being presented.

The earlier this switch mechanism for language is implanted in the brain the more easily it will operate in later life, because it is only in the young that a perfect language frame can be set up. Going on from this, it is my firm opinion (and I have some evidence to support me) that the brain of a bilingual person is better than it would have been had he been unilingual; and I mean 'better' in a general sense, not simply a verbal one, although this of course is hard to demonstrate.

Your views have had a specially marked influence on the development of second-language teaching policy in the elementary schools in the United States. Have these views been rightly interpreted?

Penfield: Yes, they have. The American Modern Language Association circulated some of my ideas to their whole membership, and this has resulted in quite a few efforts to teach a second language at the level of kindergarten and the early grades.

What about the impact of your views in Canada?

Penfield: Here the impact has been rather less widespread, although I understand they have worked when they've been tried. I believe the Toronto French School and its sister schools in other areas have adopted them with considerable success.

If you had your own way, how, ideally, would you like to see the teaching of language organized in a school system?

Penfield: I have definite views about this. I should start with kindergarten by introducing the system of parallel bilingualism, which I have seen work very well. With my own children, who would be learning English from their mother and father, I would send them to a bilingual kindergarten where one of the spoken languages was French and the other, perhaps, Russian. I should have one language spoken in the morning and the other in the afternoon by native-born teachers who don't teach language but organize play based on good kindergarten principles. I should continue this parallel bilingual teaching through kindergarten into the first grade where children get started on reading and writing. At the same time, I should ensure that my own children were presented with some English reading–two or three hours a week would be quite enough. Beyond that I don't care–I think educators have much better ideas than I have as to how second-language literature should later be studied. But as a result of their early education, my children would be trilingual in later life. In fact, my children did become trilingual before the age of six. They had German from a governess and French from a nursery school.

Do you think your scheme is practical here in Quebec?

Penfield: I very much doubt it. But what I would advocate here is parallel bilingual kindergartens plus parallel bilingual first grades in French and English. The parallel presentation could be morning and afternoon or it could be two days of English and three days of French each week. If our little ones could have English in the morning and French in the afternoon, Canada would have the best educated body of citizens in the world. And with French teachers from Quebec for all the other provinces, it wouldn't be an expensive undertaking either.

You refer in one of your papers to a bilingual mother who spoke French to her children upstairs and English downstairs.

Penfield: Yes, and it worked very well. I think a lot of people could do that sort of thing, especially parents with different language origins, because it helps to develop a better brain. Jews, for example, tend to learn both English and Yiddish as small children, and that is one of the reasons, I think, for the high intellectual caliber of many Jews.

You say in one of your papers that 'a neurophysiologist can only suggest that the human brain is capable of far more than is demanded of it today. Adjust the time and the manner of teaching to the aptitudes of the growing, changing master-organ. Then, double your demands and your reasonable expectations.' Can you apply this adjustment of time and manner of teaching to areas other than language learning?

Penfield: I don't know. There is no localization as far as I am aware for, say, mathematics–only for speech and perception.

What about creativity?

Penfield: That is a big word. We know in a general sort of way that it is related to the activity of the frontal lobes. But I don't really see how you can teach creativity.

Do you think localization of brain functions might become more exact in the future?

Penfield: Yes, but I doubt whether it will have much impact on educational timetables. I think the basis for this sort of knowledge comes from teachers presenting different subjects to different age groups in an empirical way. I've no doubt their present information is pretty well correct.

Do you believe that there is a limit to intellectual growth and, if so, at what age?

Penfield: No, I don't recognize any such thing. I think we can keep the windows of the brain open, and there is no reason why a child's inquisitiveness cannot persist all the way through life–cannot indeed grow. That is what I preach to specialists: the best specialists don't close up but keep their interest in other activities.

' THERE IS REALLY NO SUCH THING AS METHODOLOGY '

Northrop Frye,
University Professor at the
University of Toronto,
is interviewed by Johan Aitken.
Mrs. Aitken, a student of Frye's
who has taught English at many
grade levels, is presently a professor
in the English Department at the
University of Toronto's College
of Education.

Photos: Eric Trussler

Aitken : I should like to ask you to comment further on some of your earlier observations which we, as teachers, find 'echoing thus in our minds.' The following remark from the *Educational Courier* is an example :
We cannot have education without incessant repetition and practice, drill, and going over the same things over and over, until they become automatic responses.
This remark was met with a certain repugnance by many school teachers.
Why can't we have education without incessant repetition, practice, and drill ?

Frye : I don't know – it's just the way the human animal is constructed. The most miraculous feat of education I think I ever heard of was Gieseking remarking to a friend of mine that piano playing had always come very easily to him – he could always play anything after he had gone over it carefully ten times. Well, what Gieseking could do on a piano is considerably more than most people could do with anything else. The only reason for the repugnance, I think, is that this repetition is so often associated with the subconscious, with drudgery, with the imposing of an external discipline, of somebody doing it and not liking to do it, and so on. You get the same process in, say, learning a foreign language, where one person picks it up in a few weeks and another person slugs at it for years.
The only difference is that the person who picks it up quickly hardly notices the amount of repetition and practice that has been going on in his mind.

Aitken : The connotations of drudgery and conditioning, then, are the ones to avoid ; but no teacher should delude himself that drill need not be done at all.

Frye : Well, I think it's a dangerous delusion to assume that you need not do it at all. There are things like the multiplication table and the alphabet that do require a certain amount of repetition before they are in the mind. The thing to do, of course, is to eliminate the whole atmosphere of 'Write this out fifty times' – that's not what I'm talking about at all.

Aitken : In *The Educated Imagination* you explain why the Bible and classical mythology must form the foundation of a literary training. If we don't know why, that's our fault ; you have told us clearly and often. You have even told us the part of one's anatomy which should first come into contact with poetry.
Now could you suggest *how* a teacher might begin to provide young children with this literary foundation ? Are you supposed to read the story of Ruth to Grade 1 – or what ?

Frye : Well, is the answer really so difficult ? I mean, the stories are there. They are written out by people in the form in which they can be told to children. The story of Ruth the Moabitess is an utterly simple story, and its moral is the same as the moral of the Good Samaritan – that there are human beings outside your own group – and this is not too difficult even for Grade 1 to grasp. I think it's just a matter of choosing materials and also of making sure that you keep pointing out similarities among everything that you do use, so that, whatever you use, the child who is listening to it will be able to make a transition from one to the other and will feel not that they are two completely separate experiences but that they have been linked in some corner of the imagination.

Aitken : You often mention the fact that the cadences and rhythms of the King James Bible come into our language, our speech, our literature, even though at times we are unaware of it. In a watered-down translation, this element would be partially lacking, wouldn't it ?

Frye : I think that's true. Young children tend to become very much attached to certain word orders, and they want the same thing over and over again without permitting very much in the way of change, so there's a strong argument for getting the right words in the right order into their ears as soon as possible.
I noticed that when I was reviewing *The Oxford Book of Nursery Rhymes* and found that the authors had slightly different versions than the ones that I was used to ; I resented it on a very subconscious level every time.

Aitken : You mention in one of your recent articles that you think the teaching lecture will re-establish itself in a short time.
Do you also foresee the day when Grade 8 children may be relieved of stewing in their own intellectual juice in small groups for interminable periods of time, and when the teacher will be reinstated as at least one of the possible sources of knowledge ?

Frye : Well, as the man said when he shot himself with his hunting rifle, that's a slightly loaded question. But I sympathize with you entirely. I think that the seminar method is a thing there's a vogue for, and educators are great on vogues. There's no question that there is a place in the teaching process for people, no matter what age, to be discussing a matter among themselves. The point is, of course, that if you make that the regular teaching program you are throwing a strain on the student which is pretty tough, even for university students, and I think it is absolutely intolerable for children at a Grade 8 level. If you are going to make the process of education anything more than a painful stumbling through one pooling of ignorance to another, you more or less have to find a place simply for communication in its elementary form – as the conveying of information from A to B, where A knows what he is talking about and B doesn't.

Aitken : Your mention of conveying information from A to B reminds me of your recent article in the *Graduate* in which you state :
Education can take place only where there is communication, which means the conveying of information from A to B, or a discussion united by the presence of a specific subject. Such discussion is educational in proportion as it is structured.
Would you comment further on the importance of 'structure' in education ?

Frye : Well, I think rather of a discussion I got into where a colleague of mine afterwards said that most of the questions really meant 'I think you've explained that a bit too clearly ; would you mind clouding it up a little ?'
In the first place, there are a great many false analogies from democracy that get into educational theory, and the notion that for A to tell something to B is undemocratic is about as crude a superstition as one could get hold of. If A is knocking himself out trying to make something clear to B, he is simply offering to share what he has with B and is trying to equalize the whole social situation – and the more efficiently he does that, the better off B is.

Aitken : In the same article you go on to say that 'everything connected with the university, with education, and with knowledge, must be structured and continuous. Until this is grasped, there can be no question of "learning to think for oneself." '

Frye : It seems to me quite obvious that knowledge is consecutive, that there is no such thing as irrelevant information in the sense of information which is unconnected with the next bit of information. So all knowledge is a gradual unfolding of a structure which gets more and more continuous as one learns more and more of it, and the teaching rhythm has to follow this continuity in knowledge. When people talk about unstructured conversation or dialogue in counter-groups, and so forth, they are really engaged in what seems to be a religious rather than an educational activity. They're looking for existential things, but they're not looking for knowledge.

Aitken : If the student's form of participation was thinking about what he hears instead of being ready with an impressive rejoinder, real learning might have more chance to occur.

Frye : Oh, I couldn't agree with you more. I think that when you set up the conditions for this kind of seminar-symposium discussion, what you get is a sort of group monologue.

Aitken : There used to be jokes suggesting that the universities believed English literature had ended with Matthew Arnold. All this has changed now. Recently I taught some graduate students who seemed to think that English literature *began* with Matthew Arnold – or some time later. This seems to me a greater and more serious distortion than the one embodied in the jokes. As you have said, 'the nature of the discipline, not a truant officer, dictates what we should study.' If, however, more and more students are permitted to choose their own courses, what can the elementary and secondary schools do to ensure that these choices will be informed ones ?

Frye : Yes, that raises the whole question of the role of historical imagination in the learning process. I remember when I was at Oxford there were three English courses which were arranged in order of prestige. The first, and the most 'prestigious,' as people say now, was mostly Old Norse and Gothic ; the second one staggered about as far as the death of Chaucer, or maybe it was 1500 ; and the third, which was the popular one – the mass-produced one for the Rhodes scholars – went down to 1830, the end of the Romantic movement, and thereby left everyone in a state of great confusion about the date of Wordsworth's *Prelude,* which was written in 1804 and published in about 1850. The theory behind this, however, was something that I sympathized with. The theory was that a cultivated person, such as an Oxford undergraduate was assumed to be, would be reading contemporary literature on his own, that it was not something he ought to be getting academic credit for, and that consequently what he studied was the literary heritage and not the literature that was springing up all around him. Well, I doubt that this is practical pedagogics in North America in 1970, but I still have a lot of sympathy with that view. I feel that to start out learning English literature with what is quoted in T.S. Eliot is a rather barbaric and dubious practice, and that as you go on with that, the cruder it gets. You see, there are always two things about a writer – like Shakespeare, let us say : there is what he meant to his own time, and there is what he means to us. If you concentrate solely on what he means to us, then you are simply kidnapping him and turning him into a twentieth-century writer, which he wasn't. If you keep in mind the other pole, that he was writing for a quite alien civilization and culture with very different standards and assumptions, that is the liberalizing element in your reading. It's introducing you to an unfamiliar cultural milieu.

Aitken : So you're no longer confined by the blinkers of your own time and place ?

Frye : Of your own assumptions, yes. Like scolding Shakespeare for not having an enlightened view of Jews, for example.

Aitken : For some reason contemporary literature is often the only kind considered 'relevant.' Could high school teachers do more to infuse an interest in the literature of other ages ?

Frye : I think it is true that every age left to itself is extremely provincial and narrow-minded in its cultural assumptions, and an education in other cultures and other periods is the only possible way out of it. Relevance can be an extremely barbaric cry if it's overstated.

Aitken : We seem to be getting away from any prescriptions in the English curriculum. Do you see an end to this ?

Frye : Oh yes. I think as long as I've been watching education, it's been a very pendulum-swinging kind of operation. There have been the wildest swings from one extreme to the other. One hopes that, like a cuckoo clock, eventually the pendulum will come down a little bit further and not swing quite so wildly.

Aitken : Would you comment upon educational media, or audio-visual aids as they are often called ?

Frye : Well, the oral tradition, the association of literature with the spoken word, is too much *there* ever to be ignored, and that comes partly from the teacher. That's one reason why the lecture is never going to be abolished as the center of education. Recordings can be part of this whole process. It's very interesting to know that some poets are the best readers of their own poetry and other poets are the worst, and that a good many other poets are somewhere in between. I don't know so much about the visual aids. I've seen television programs based on literary themes with scenic effects, and the scenic effects seemed to be for the most part rather churned up. They didn't seem to belong naturally to the subject.

Aitken : High school students flocked to see the film *Romeo and Juliet* because the play was on their course of study. Is there any danger that in the case of a 'first encounter' the director's interpretation could dominate a student's thinking ?

Frye : I think that it is certainly true that a dramatist intends his work for the stage and a stage is where that work should be seen. There is perhaps some danger in allowing the film presentation, or even the stage presentation, to dominate one's conception of the play so that one can't really see anything in the printed text except what one saw previously in the film. I didn't see a movie of *Romeo and Juliet* until I was of college age, and then, I remember, Juliet was played by Norma Shearer, who of course was quite old enough and strong enough to have thrown Romeo over her shoulder and walked to Mantua with him. If I had seen that at a very impressionable age, I perhaps might never have got that Juliet out of my head whenever I read the play.

Aitken : Can that happen with picture books ?

Frye : Yes, I think that could happen. A very good example is the Tenniel illustrations to *Alice in Wonderland*. I mean, I wouldn't accept anybody else's Mock Turtle at all.

Aitken : As *Design for Learning* reminds us, 'the catch phrase "creative writing," as it is presently used in the schools, has no precise meaning.' Nevertheless, periods for 'creative writing' are still set aside in all our schools, and during these classes most children put words on paper. Most of what my children wrote had great appeal to adults – perhaps this is what the youngsters intended. What is your view of children writing to order at regular intervals ? In fact, do you think this whole area of so-called creative writing makes sense for young children ?

Frye : It seems to me that using the word 'creative' as an adjective for writing attaches a kind of mystique to the whole operation which is unutterably phoney. It's obvious that one has to learn to write as well as learn to read, and practice in writing is something that I don't see how anybody could object to. I think it should be clear, though, that when young people practice writing, they are actually practicing a rhetorical skill, and what they turn out is going to be the product of a rhetorical skill. I thought your remark was very shrewd, that they produced what they knew adults were going to like. This has just as much to do with what the professional writer does as anything creative. It doesn't need to be attached to the notion that you are somehow fishing in the subconscious.

Aitken : Children's writing is often a matter of accurate diary keeping. Do you think that calling it anything else glorifies it out of all proportion ?

Frye : Yes. I think it illustrates a sort of 'Rousseauish' sense of the natural man which seems to me a little half-baked. The ability to express oneself in painting and writing, and even in composing tunes, ought to be a fairly natural secretion of any child of normal intelligence up to the age of twenty or so. But the question of acquiring the rhetorical skill is a quite different thing from the question of what you are going to do with it after you have acquired it. That's the point at which very many people stop.

Aitken : So often children are asked to write and paint and generally emote Tuesday and Thursday afternoons when they haven't had enough experience, literary or otherwise, to have much to say. Do you think these activities are nevertheless worthwhile ?

Frye : Yes. The developing of the skill has something to be said for it, I think. The question of the profundity of the content is not important at that point. It's just another example of what I mean by the repetition and practice which is in all the learning process.

Aitken : Many people in education decry *content* and emphasize that it's the thinking process and 'thinking about thinking' that matter. What is your impression of all this ?

Frye : Well, I'm very astonished to find that this is still going on in educational circles. I thought it had perished with Sputnik back in 1957, and that educational theorists were now much more aware of the fact that content is absolutely essential in every subject and that no teacher is worth anything except to the extent that he has mastered that content. There is really no such thing as methodology, and there is certainly no such thing as thinking about thinking, except among a very small group of epistemologists. The process of thinking is something that you cannot do at random. It's an acquired habit. It's just like playing the piano. If you are thinking, you can only think about something. What you're thinking about has itself a body – an interconnected body of ideas. You enter into that body, and then you add something new to it. But you can't think at random ; you can't think at will. Consequently there can be no education at all apart from the communication of content.

Aitken : You would agree that knowledge of his own discipline is what inspires the great teacher ?

Frye : It's the only thing that inspires him. If you're teaching mathematics, you get inspired by mathematics. Nobody gets inspired by some vague notion like teaching as an end in itself.

In a good school...

interview with Paulo Freire

Paulo Freire evolved the educational theories of his Pedagogy of the Oppressed *in working with the illiterate peasants of Brazil, especially adults. These theories are based on the belief that in an exchange with others, every human being, whatever his background, is able to critically reflect on the social conditions of his world and act upon that world in order to transform it. After the military coup of 1964, Freire was expelled from Brazil and emigrated to Chile, where he served as professor at the University of Chile. Until recently a Fellow of the Center for the Study of Development and Social Change and a Visiting Professor at Harvard's Center for Studies in Education and Development, Freire is now serving as a consultant to the Office of Education of the World Council of Churches in Geneva, Switzerland. This past summer he visited as a lecturer in the Department of Adult Education at OISE. Here he is interviewed by Hugh Oliver, editor of* Orbit.

Oliver: You are a person of considerable influence and reputation. What is the mystery of being a great man?

Freire: Putting aside false modesty, I do not consider myself a different person. Nevertheless, there is curiosity in many countries about what I am doing and what I have done. I think for me it has been largely a matter of coincidence — of being in the right place at the right time, of having come up with certain ideas during a period when they were needed.

Oliver: Your views on world literacy and adult education are widely known. Instead I should like to ask you a few questions on the education of children. What do you think of the traditional North American school? Illich talks of abandoning the school system. What would you do?

Freire: For me, schools are neither good nor bad in themselves. It depends on the approach, the objectives the school has. And, of course, no school is neutral. Each school is a reflection of the society which it serves and is analysable only in the context of that society. But in my opinion a good school is one in which the students develop their curiosity — the way they think and the way they act. In a good school there is no dichotomy between mental and manual labor or between teaching and learning. The students are also teachers and the teachers also students.

Oliver: In the past decade there has been a trend toward a more liberal, less structured type of education. But recently there has been a backlash. It is argued that students are failing to learn the basic skills. What kind of education do you advocate?

Freire: As I see it, education fosters the understanding of reality. But reality cannot be understood through learning a package of skills. Rather I should say that education is a process, the transformation of reality by the human mind. And of course it is a very complex process.

Oliver: Yes, though I would still suggest that knowing some basic skills can be helpful in the process. And here it is being argued that in a more structured situation with the teacher in a more authoritarian role, more students tend to learn faster and more thoroughly.

Freire: That would be if the main task of the teacher were to fill the students' heads like empty pots. But the good teacher should challenge his students to think and to create. His role should be that of a motivator. And it is less important that his students memorize a body of established knowledge than that they understand the *raison d'être* underlying that knowledge.

Oliver: Let us take a specific example — the 'two-times' table.

Freire: Very well. It is less important for them to memorize that twice two is four than to understand that two bricks plus two bricks makes four bricks — in other words, to establish a relationship with concrete experience.

Oliver: What value, then, do you put on education as an academic discipline — as, for example, the Graduate Studies courses at OISE?

Freire: I am neither for nor against — it depends on the objectives. Such studies are of little value if they are treated as an intellectual game without relating them to the concrete reality of school systems. But if the theoretical context is combined with the concrete context, then I regard such studies as very useful.

Oliver: What precisely do you mean by the theoretical context?

Freire: I mean the context in which we are trying to understand the reality that confronts us, probing to discover the underlying cause-and-effect relationship. But the moment we cut the connection between the theoretical and the concrete, we become involved in blah.

Oliver: What has been your experience at OISE?

Freire: In the few weeks I have been working here, instead of giving lectures and dissertations I have asked the students to speak about their experiences; and afterwards we all analysed these experiences and tried to understand their general implications.

Oliver: Proceeding from the actual to the theoretical?

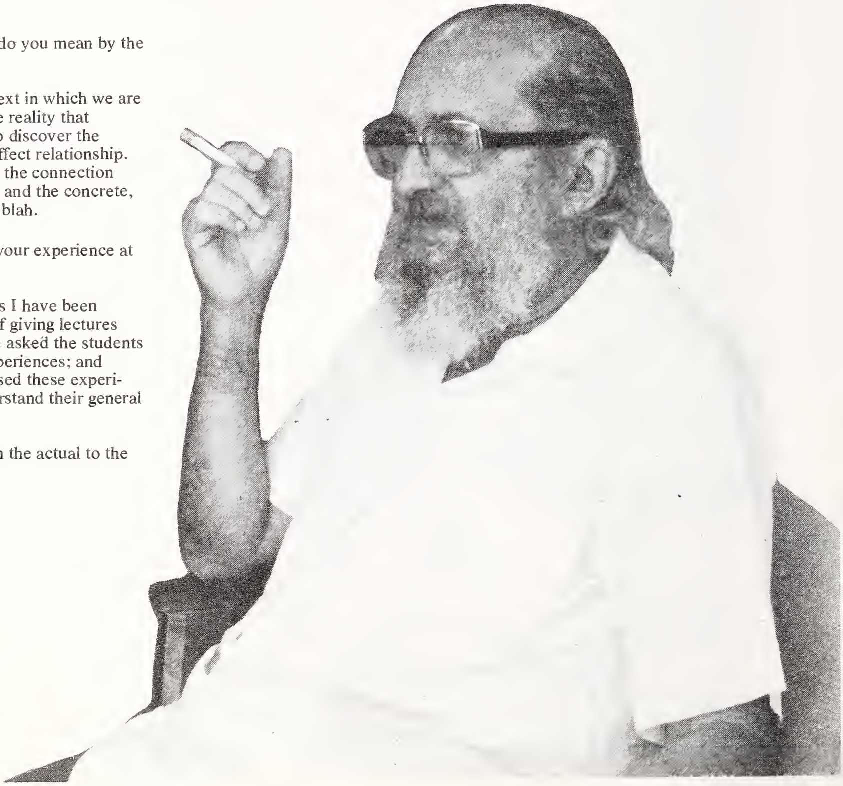
Freire: Exactly.

Oliver: As I understand it, one of your educational aims is to make people the makers of their own destiny. But it seems to me that this can be a two-edged sword. When people are entirely free to do their own thing, chaos is often the outcome.

Freire: I do not think that freedom is meaningful in the abstract. You have to ask who has freedom and for what and against whom. Those who have power have freedom in that they can limit the freedom of those who don't. Freedom has meaning only in the concrete situation in which we find ourselves. For example, in my efforts to teach people how to read and write, my greatest concern is that they should grasp why it is necessary for them to do so — in order to understand the complexity of their society.

Oliver: Your views must obviously have been influenced by your experience in Brazil. To what extent do you think this experience is transferable?

Freire: Another person's experience cannot be swallowed as is — it has to be re-created or re-invented. In Canada, for example, my ideas on literacy would have to be modified to fit the particular social context. But often what works for one situation will work, with modification, for another similar situation. In the end, it is generally a matter of discovering new ways of approaching a familiar process.



A Dialogue with Thomas

Guest Editors Dave Hunt and John P. (Jack) Miller held this conversation with Thomas Moore in the spring of 1999 for *Orbit* magazine.

Miller • This issue of *Orbit* deals with education and the soul. Could we start by talking about what that word soul means to you and then relate that to education?

Moore • Soul is a very old word, at least two or three thousand years. It has never been completely defined or adequately presented. It's one of these words, we have so few of them, that is bottomless. It's re-defined, re-imagined in every generation. There are two images that I use frequently. One I get from Heraclitus who, in the 6th century B.C., said that the soul is deep. It's an image that helps us to distinguish soul from a certain kind of spirit that is high. In *Care of the Soul,* for example, I suggest that the soul involves a going down rather than a going up – not only going deep but also often it means becoming more ordinary, more humble, more part of the earth, and less pointed towards the empty sky, where one imagines new worlds, future worlds and all of that. The second image I use for soul is spring, like a spring of water, a spring out of which life flows. It seems to me that it is very helpful to remember that we don't make up our lives, we don't manufacture them every day. A great deal of our living is a response to desire and fear and images that spontaneously arise in our imagination, and whatever the source of those images is, that's what I would call the soul as well.

Miller • So, there is a sense of mystery about the soul, isn't there?

Moore • When you're in the realm of soul, you're always in the realm

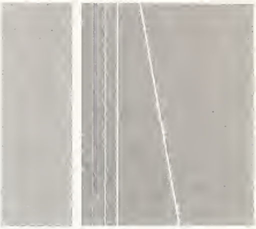
Moore

of mystery and that's so difficult for modern people to get because we automatically think that life is a problem that needs to be resolved. If, say, we have a drug addiction where people's lives are falling apart, we tend to look at it as a problem that needs a solution, but if we were to look at it as a mystery, then we would have to delve very deeply into what's going on, into the use of drugs, and also into our reaction against drugs, our fear of drugs, their destructive nature, what people are looking for, what the hunger is and the craving. When you begin to think mystery, it takes you to that soul place where you get deeper and deeper and deeper. You're not at that surface place where you're simply trying to solve a problem and then go on to the next one.

Hunt • The way of regarding the soul that you describe in your work is in some sense detached. Is this part of what allows the soul to come forward?

Moore • The first step in caring for the soul is to get out of its way. People say, "What can I do for my soul?" "How can I care for my soul today?" "Give me a suggestion for myself." And I will just say, "Well, what's happening?" "What's going on?" "How are you getting in the way?" "What wants to happen?" "Where are your deep desires?" "Where do you interfere with them?" A large part of soul work is simply letting it be. My idea of doing therapy is to provide a space where the soul can enter and not be condemned or judged or cured, but simply be. When I practice therapy, I'm not so interested in the person's own purposes and interpretations as I am in the whole life that comes forward in a therapeutic setting, more the soul life as opposed to what a person might understand to be going on.

Hunt • It requires a lot of patience.



Moore • And humility. It's a way of being able to give up all the heroics, so that you're not really trying to feel good because you have solved the problem or got on top of something. As a matter of fact, a lot of times you have to allow yourself to be taken places that you'd rather not go, and places that you don't understand. I think that's true of dreams which seem to be very close to the soul. We can have the illusion that we understand them. We deal with them, we talk about them, we try to come out on top, but we don't really understand them.

Hunt • Your phrase in the subtitle of your second book, *Honoring the Mysteries*, has been very important to me. I think that is such an important admonition.

Moore • That's what I understand to be the essence of religion. I don't mean institutional religion or traditional religion, although those are very important. I mean religion more as an aspect of human living. To honor the mysteries is to find a way to do something with them, instead of just saying, "Well, I give up because I can't figure it out." It might mean writing some poetry, singing some songs, and developing some monastic ways of life focused around mystery or meditation practices, where you're trying to hold the mystery. All of these different techniques of religion are ways of honoring the mystery.

Hunt • There are several words that are similar to soul that we often encounter – heart, spirit, and even self. You referred to the soul's ancient theme. Do you feel it's important for individuals to use the word soul or understand its meaning or does it seem equally valuable for them to discern in their own way what I would call their own inner language?

Moore • There are two sides of that issue for me. One is that I try very hard as a writer not to make things up as I go along. I'm pretty much a commentator on traditions that appeal to me. In my own writing, I draw very much on Jung, on Taoism, on Zen-Buddhism, on ancient Greek religion, on Christianity, and on few other sources – Platonism and neo-Platonism and European Renaissance literature. If I'm using the word soul, I'm using it within certain traditions, so I make a clear distinction between soul and spirit and self. I don't think of the soul at all as the Jungian self. It is a psychological term and it has narcissistic overtones, and I don't care for it, even with the capital S. On the other side, though, I don't think the word soul is at all necessary. That would be a terrible thing, to take a word and deify it – that's not what I want to do. I much prefer what the Zen Master says, that we can't be attached to that kind of language. If people come up with some other word or image for soul, that's terrific – let them really be consistent and precise, and go off and make sense of it and be persuasive with it.

Hunt • As academics we're taught that precision of definition is very important, and yet when I'm working with colleagues, when I'm doing what I call invitational learning, I use a number of different ways of describing the same particular notion, so that individuals can connect with it in their own terms. And so it's a dilemma, a kind of a conflict, which I' ve been aware of, and I think you address both those issues.

Moore • Another example of that, for me, is the word depression. It's a big balloon of a word that really doesn't mean much at all. It's used to cover all kinds of experiences, and I think because it's such an empty word that medicine can use it, and you can take a pill for it. But if you talk about sadness, or heaviness, or coldness, or weight, or things like that, about withdrawal, loneliness, solitude – all these words that are used for depression that are much more precise, you really wouldn't imagine taking a pill for it.

Miller • In the forward which you wrote to my book, you talk about the soul as educator. Just now, we've been talking about trying to get out of the way of the soul to let it unfold. Could you clarify this?

Moore • Life just keeps pouring out of the soul – memories and desires and wishes and plans and fears. In that sense, the soul can educate. The role of the soul can be to allow the seed of a person to unfold. There are all these images, like the butterfly for example, where the soul is a condensed seed-like thing that unfolds. A lot of philosophers and theologians have used that image. And so there's an unfolding, an unweaving of the soul, and that could be seen as education, the leading out, the unfolding – the unfolding of the person, maybe the unfolding of culture, the unfolding of the past as we study it. In another more personal sense, I think we are educated as we ourselves unfold, when we run into an obstacle for example.

Thomas Moore

> Life just keeps pouring out of the soul – memories and desires and wishes and plans and fears. In that sense, the soul can educate.

If a person, let's say, is trying to deal with a divorce, there's a tremendous amount of education that goes on in those months or years that would not happen otherwise. And that's an unfolding where you might say the educator is the soul. It's not the person – the person wants to get out of there and wants to solve this thing as quickly as possible. But the soul is the unfolding of the seed that is there, of the life that is there.

Miller • I think we have a real problem of being sensitive to the soul in our schools because there's so much emphasis on the curriculum and particularly today on accountability and testing. If you were talking to teachers, what are some of the things that you would suggest they can do to honor and nurture the soul of the students that they see everyday?

Moore • The first step is a kind of soul analysis. We've got to put education on the couch and see what's going on – what are we afraid of, what is the fear that the testing responds to? If we don't know what it is, and we only deal with it on its own terms, we won't get anywhere, because it's clear to me that it's an expression of an anxiety. I have tried in one of my books, *Dark Eros,* to look at some of the sadomasochistic factors in education. Very few people take joy in tests, although maybe they do in a certain masochistic way. There's mainly a lot of suffering, and the joy that is there is the joy on the part of the people who are inflicting the test on other people. So an analysis of the fantasy and emotion that are involved in our education is, I think, the first step. It's a mistake to say, "Okay, how can we reform education?" "How can we do this better?", because we can't do it better if we don't know what the symptom in front of us is.

Miller • In our work with teachers and educators at OISE/UT, we encounter all this anxiety and fear around testing and accountability. How would you work with that?

Moore • I'd work with that imagistically. For example, last week I was at the Harvard Medical School talking to some medical students, and one of the things we did that evening was to examine some of their fantasies of what it is to be a physician. We talked about the fantasy of the patient who thinks that the doctor is divine – you know, the divine healer. We also discussed the fantasy of the doctor's office, of the examining room. And I think that could be a fruitful way to approach educators. Look at the buildings we put up and say, "What is going on here?" "What kind of fantasy could produce a building like this?" And at a deeper level, "What do you think is the dream here?" "What's really beneath the whole thing?" When I taught college, I would ask people to go out onto the campus and come back and report what myth they found out there, what deep structure they found in all the different buildings, and in the way the desks were set up, and in the testing, and in the teaching, and in the language. What you find is that just beneath the surface, there's a myth at work, and I think to be able to look at that is taking a giant step.

Hunt • So, taking on that imagistic stance is a very central step in this endeavor, isn't it?

Moore • Yes! If we approach education with the idea of reform, that's the hero approach, or if we approach it by saying, "Why are we doing what we're doing?", that's too analytical, too mental. We haven't left the problem area at all, we're still working with the methods and the points of view that we're trying to counter. We have to take the soul's own method, and the language of the soul is image and dream and myth. It takes a slightly different technique and skill, maybe, but that's, I think, the way to get some movement.

Hunt • I invite the teachers I work with to bring out images of their work in schools and classrooms. Often they discover images they were unaware of. Would you see the images in education being similar to those in other fields? How would you go about an imagistic approach in education?

Moore • I think that teachers could use some guidance. Instead of leaving it all up to them, you could say, "Do you recognize any parental elements in your teaching, or among your students, or in your own attitudes? That's one set of images you could look at. I might use the old renaissance astrological sets, and say, "My students used to find Saturn to be prominent in the educational system. What would it be like if we made our school Venusian?" You could also, I suppose, explore the sadomasochistic thing – you could ask, "What are the power issues in teaching?" "What do you feel?" "Do you ever feel like you are the tyrant or the president or the king or the slaves or subjects?" – all that SM language. There are many

I often think care of the soul is a matter of being able to give more attention, more weight, to family life and to home than to the heroic quest for success.

different sets of images that you could use to help teachers explore their work. I think they'd find it fun as well, because it's fun to work with images as opposed to trying to tie your brain into a knot to analyze everything. There's nothing in the world wrong with the mind – we certainly want intelligence and information and study. But I think there is a difference between simply using your mind and having good ideas and using good rational methods, and having a schizoid mind, of being dissociated – cut off – from the fantasy and from the imagination and the heart, you might say.

Hunt • A lot of teachers and health care workers here in Ontario, and I'm sure elsewhere, experience this feeling of being cut off – cut off from others, and perhaps cut off from themselves, through the demands and pressures that are being put on them through downsizing and budget cuts. People come to us, really, at a survival level. They feel burnt out, or near burnout, and the issue that's challenging for me especially is they don't feel they have time for anything. As we've been talking about soul work, it takes humility and patience, and a different sense of time. I'd appreciate your reflections on what we might say to these experienced practitioners in education and other caring professions.

Moore • Your question reminds me of the many times I've met with therapists and with hospice workers where there's a lot of burnout as well. There's no one answer, but I have some suggestions. One is that people often get discouraged and burnt out when they feel that the system is so big and they are nothing, they are so small. If it's possible to turn that perception around, to see that it's also an anti-soul attitude, it can really help. From the soul point of view, the individual is of extreme importance, and a short life is as important as a long one. The child is as important in what the child says and knows as an adult. If we take the soul approach, we're not in that same measuring place, and it sometimes turns out that the very small things that a person does have a great deal of weight and importance. As an example, if a small community does something that is rather brilliant, it just comes out of an inspiration – they get this inspiration and they do it. In Hartford, Conn. for example, the community decided to have a gathering about four times a year where they would invite people in, and discuss the really weighty issues for their community. They've had thousands of people come to these gatherings! Other cities have noticed and they've started up in their own way as well. I think that part of the modern fantasy, of modernism, is that we think that everything has to be a mass movement, it has to be done in a very large way. That's not the soul way. The soul is very specific, individual, unique, and often small. So, I think if a person could have that imagination of their own life and their own work, it would actually help quite a bit, and if they could be faithful and loyal to their own intuitions of what they think is important, I think that would help with the burn out. If we can do these small things, and do them well, and nurture them, and talk about them, and have pride in them, they will have their own reality and create a life. A life comes out of that, no matter how small it is. And I think that's where the joy, the creativity, and the end of depression comes from.

Hunt • Have you found in your work with therapists and with other practitioners who are near burn out that the encouragement to become mindful, to honor these small acts that you describe so well in *Care of the Soul*, has a sustaining and a nurturing effect for them?

Moore • I find that an awful lot of people who are professionals, like the ones you are talking about, have been trained technically, and their own education has not been terribly deep. I don't mean that they're not full of heart and imagination, because most of the people I see are, but they haven't had the reading, the background, or they read the wrong things. I'm always telling people, don't read anything that's not worthy of your time. We read a lot of books by psychologists and leaders, but I think we'd be much better off going to the best we can find, whatever that is. For me, it's Greek tragedy, or a really good mystery writer, or it's a good poet, one that I like, one that appeals to me. It seems odd, maybe, to put it that way, but I think that one of the reasons we burn out is that we don't have deep roots – like grass, you know, it just burns if it doesn't have the roots, and I think the roots come, first of all, from good reading.

Miller • As more and more educators are beginning to talk about spirituality and use the word soul, it gets us into the area of religion and the problem of the separation of church and state, or what's the role of spirituality in schools. I'm wondering if you could talk about that a little bit?

Moore • It's something I just can't fathom very well. We can talk about religion and spirituality without forcing our values on any-

body, or being prejudiced that way. We can teach religion as an academic subject. But I know that people aren't there, so I spend a lot of my time just on this issue. I don't think as a culture we are at a point to be able to make that distinction very well. Generally, people are very, very unsophisticated about the nature of religion. I don't run into this problem when I talk about the soul. In my work, it's very clear to people that I'm not talking from within any particular religious background, or particular place. But I noticed in amazon.com recently, in reading the reviews of my last book on sex, that someone complained I hadn't included a lot of Jewish material in it. Well, you know, I just don't know that material and if I added any of it I'd make so many mistakes I'd make a fool of myself. I also get complaints from Catholics because I have a Catholic background, and they say to me, "Why don't you write about Jesus?" "Why don't you use the Gospels?" I find that, by going to other religions I have much more freedom. I get in trouble with it constantly, and I wonder about it, but it doesn't slow me down.

Miller • It is an issue among educators, and I think that part of it is due to the religious right which is very concerned about these kinds of things in schools, particularly in the United States. But it maybe also relates to what you were saying earlier about the anxiety around the testing issue. I think there's some fear around this issue as well, and we need to look at that first.

Moore • I think you're right. I'm working right now, even as we speak, on a book about spirituality, and I'm writing about faith, not as a mental activity, but as an aspect of the imagination, and therefore very close to the emotions. I think generally we don't think of religion enough as an emotional issue. You know, we think it's just a matter of who believes what, and the belief means what do they intellectually understand, and what do they accept intellectually. But religion is really a matter of the heart, and if we don't address it at that level, we're really missing the boat. We're talking so far above where things are really happening that we're not going to have any impact at all. One of the things I sometimes do, though, is tell people, "Can you read Joseph Campbell, can you watch his tapes and feel okay?" If people can do that, then usually they understand what I'm up to. If they can't, then they're in that madness of fundamentalism, and there's no way of dealing with that, except, you know, the way you normally deal with psychosis. I mean, it's a huge problem.

Hunt • Our last question refers to the importance of beginning with ourselves and exemplifying what we believe in. We're asking each of the contributors to this *Orbit* issue to speak to this question briefly and to talk about how they nurture soulfulness in their lives.

Moore • I don't do it by design so much. I often think care of the soul is a matter of being able to give more attention, more weight, to family life and to home than to the heroic quest for success. I work at home, I don't travel a lot, and when I do the family goes with me. It's something that we are working at though, constantly. It's not something where you get a blueprint and then just stick to it and it's easy. It's a struggle all the time. I don't want to give the illusion that you can care for your soul in a very pretty way, to sit down and have this wonderful, perfect, tranquil life – that's not what it is. The soul is warfare, too, in its struggle and its failure, because you fail all the time, and I don't think I've ever resolved the issue of caring for my soul in relation to my work. Since I spend about eight hours a day working, I think that caring for my soul has a lot to do with the way I work, and I try to do that in a way that has a lot of pleasure and love in it. Yet it's full of drudgery and challenge and problems and the same day-to-day issues that everybody's got to deal with.

Miller • Your soul is speaking, then, when your writing is going well?

Moore • Oh, even when it's not going well. It doesn't go well most of the time. You know, it works out eventually, I think, but the writing is a real struggle. I write a lot of pages and I look at it and it's trash, so I re-write and I re-write and I re-write...

Miller and Hunt • We're going to have to end here. Thanks so much for talking with us.

Books by Thomas Moore (all published by Harper Collins)

Care of the Soul: A Guide for Cultivating Depth and Sacredness in Everyday Life.

SoulMates: Honoring the Mysteries of Love and Relationship.

The Re-enchantment of Everyday Life.

The Education of the Heart.

The Soul of Sex: Cultivating Life as an Act of Love.

Making Workplace Connections in the Curriculum

Interview with Senta Raizen

Howard Russell

RUSSELL ***How will employment be different in the 21st century?***

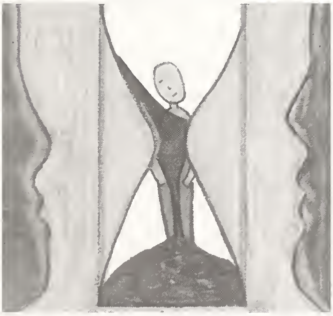
RAIZEN We have already undergone the key change from the industrial age to the information age. But not everyone is going to be a "knowledge worker" in the sense that has been defined as people who are the first wave of the new information age. I think we're undervaluing a lot of contributions to work and to society that won't require a high level of technological or scientific or mathematical competency.

RUSSELL ***In my experience, companies depend on experts and on critical occupations to come up with answers to seriously complex problems but they rely on teamwork and expect their experts to work with other people. Any of the data I've gathered suggests we haven't helped kids very much in getting along with one another.***

RAIZEN Oh, absolutely. Our education system is so focussed on individuals that we'll have to push very hard on educating for teamwork. Having said that, there will be people clacking away at their computers, or whatever form the PC will take in the future, who will be making a contribution without being members of teams at all. So, I agree with you about teamwork, with the caveat that there will be different configurations for work in the future

RUSSELL ***Do we need a new kind of curriculum for a more technological society? Do we need to do technology education differently?***

> *Our education system is so focussed on individuals that we'll have to push very hard on educating for teamwork.*



RAIZEN When we talk of technology education, essentially what we're talking about are some basic notions that go into the development of a technological artefact up to very complex technological systems. We're talking design, we're talking feedback, we're talking systems when things get more complex, we're talking repetitive trial and so on and so forth. In the U.S., technology education is in bits and pieces and it's probably going to be a long struggle before it finds a truly honoured place in our curriculum.

I think what makes technology education possible is a focus on a meaningful project in Dewey's sense. I'll just give you one example that comes from England—dealing with the heating problem in an old age home. The inhabitants were complaining about feeling cold all the time. The kids went in and investigated the heating plans. They made a number of suggestions, some of which were taken up, to improve the circulation. But the inhabitants were still feeling cold, so the kids returned, did more interviewing and came up with a social solution. Instead of having everybody spend all day in their little isolated rooms, and maybe come down for an hour of television or dinner, the home created more social interaction, something suggested by the kids. This is the kind of meaningful projects I have in mind for technology education.

RUSSELL ***We don't want the project to become a subject, to become as rote as some of our current teaching!***

RAIZEN You're right. In technology education, making a mouse trap or a car or seeing who can make the fastest little propulsion vehicle often becomes the object in and of itself. That's where we can lose the connection between a basic understanding of what we're doing in terms of science, mathematics, and technology and how the project is meaningful for the kids.

RUSSELL ***It seems to me that schools are operating much like they were operating 20 or 30 years ago, and nobody knows how to get out of that rut. Do you have some observations on that point?***

RAIZEN Here in the U.S., children are maturing earlier. That is not to say 16 year olds are fully adults, but they're maturing earlier and we have to find a way of giving them a core education by that age, and then making available alternatives. But we don't like this approach in the U.S. because we think it's undemocratic. We see these alternatives as second-class, as having less value than our traditional academic high school education. I think we are going to have to really work hard to find ways to present these alternatives so they are not perceived as second class. How long should we teach the identical curriculum to all our adolescents—is it really to age 18? At what point can we open up and have kids have experiences that go well beyond the school walls? With the desire to shrink the public sector, can we rely on the private sector to take up the challenge to provide opportunities for kids to work with adults to get the kinds of skills they need?

RUSSELL ***How do we evaluate more applied learning programs?***

RAIZEN Our SAT scores, when used properly, predict performance in the first year of college or university. They do not predict outcomes for students in five, eight or ten years, because they have nothing to do with motivation or the other kinds of things that determine longer-term performance and success. What do we do about that? Let's say you do one major project in the course of the school year. It seems to me that one way to evaluate this work is to have the kids present it to community leaders, to people who count, whether that's school boards, whether that's the city council, whether that's some people in the private sector they've been working with.

RUSSELL ***What set of evaluations would you have for project work?***

RAIZEN There are ways of representing the work that are not verbal. Yet we put a great deal of emphasis on verbal representation of one kind or another, and in fact I don't know how to evaluate competencies that are expressed in ways other than verbal. We do to some extent in the arts, but that's after literally hundreds of years of developing and understanding the criteria. The issue of how do you evaluate individual contributions in project work or in team work, and how do you ensure that people whose talents don't necessarily run to the verbal are able to express their competencies in ways that we can assess and value, is not settled. I think there's a lot of research and work to be done.

RUSSELL ***It seems to me that the performance testing movement has taken hold in a number of places and there's some hope there.***

RAIZEN Of course the answer's yes, but let me say a couple of things. One of them is that we have crept into large-scale assessment, which is fine, but once we've done that, we have to construct the test so that it is reliable across zillions of kids. The performance task has to be very narrowly defined and the implementation, the administration, the responses to the questions, etc., etc., have to be very carefully designed so that we essentially are measuring the same thing for all the kids who take the test.

If we move on to performance tasks that are richer, we have a concern of developing rubrics. And by the way, developing rubrics can be a marvellous teacher development exercise. We can have the kids perform tasks, have the teachers observe what the kids are doing, and then try to develop rubrics that will assess what teachers think is in the task. Is the task really measuring what we think it is or assessing what we want to assess through performance tasks? Are we getting information we can't get through traditional tests? My point is that performance tasks are just one approach. We certainly need multiple measures and we need to be clear about what we're measuring. Are we evaluating programs or are we assessing student performance and student achievement? It's a very complex area.

RUSSELL ***What in your view are some exemplary school-to-work programs and resources?***

RAIZEN We recently finished a book, published by Corwin Press in 1999—*Connecting Mathematics and Science: The Workplace Context*. It's a guide to materials for mathematics and science teachers and vocational and technology teachers which discusses and lists science and mathematics curricula that make connections between these subjects and the workplace. The book takes a very practical approach. It lists six ways that these connections can be made, from the strongest—actual work experiences—to the weakest—providing information about workplaces. Illustrations of guys working in an energy-producing steam plant don't count, unless the kids actually get to go to the plant. This in turn should stimulate workplace activities in the classroom, adding workplace examples to the math, science and technology curricula. But it's also important to invite people from workplaces into the classroom to talk to the kids. Those connections can be either strong or elusive for kids. In the U.S., the emphasis on academic standards is so strong that we need continuously to emphasise that for many kids, these workplace connections have to be made, even in the academic curriculum.

We did a book a few years ago: *Technology Education in the Classroom*, published by Jossey-Bass in 1995. It's not the same as school-to-work, though they are strongly related. In the book we talked about a K to 12 technology curriculum that foreshadows school-to-work in the upper secondary school. I think one of the errors we make is to start too late with workplace connections, in Grades 9 or 10 or 11. That's a loss.

There has been a very successful school-to-work movement in this country with the academies. They were built around local industries but also with a very strong focus on academics. For example, there's one in Oakland focussing on aerospace where the kids intern in this industry. Almost all go on to some form of higher education. There are others where students work on heating, air conditioning, or whatever along with rigorous academics. The academies tended to draw on kids who were not making it in regular school as well as those going on to tertiary technological education, to community colleges and so forth. These programs have been very successful, and probably similar to lighthouse programs described in this *Orbit* issue.

RUSSELL ***Thank you very much Senta for sharing your many years of research experience with* Orbit *readers.***

Senta Raizen, a chemist by training, has been involved in science education since the 1960s' reform efforts. As director of the National Center for Improving Science Education, Washington, D.C., she has led many projects aimed at science education improvement. These have led to a series of reports calling for reform of curriculum, instruction, and assessment in Grades K-12, books on teacher education, technology education, science curricula and assessments in other countries; several other books and many articles.

The Story of Media Education/Media Literacy in Canada:

An Interview with Barry Duncan

On the occasion of the 25th Anniversary of the Association for Media Literacy (Ontario), Toronto teacher Ian Esquivel interviewed Barry Duncan, founding member and untiring promoter of media education in Canadian schools.

Barry Duncan

ORBIT *When you first became involved in media education, what were the issues you wanted to deal with?*

DUNCAN I guess we're talking about 1978, so one of the first things you have to realize is what the technology was like and what people were focusing on in their classrooms. Most media education was film oriented … we didn't even have VCRs … so film tended to be the big thing. If you showed really good films, like Fellini and Truffault and Eisenstein, you'd be able to "save" kids for "high culture." Whatever stuff you couldn't stand was sort of put out the door. … And the National Film Board films played a big role. They were the ones you used for discussion purposes. In many cases you were teaching through and not about the media, although you did a little bit of each.

ORBIT *At what point did you feel there was a need to go beyond teaching film aesthetics and theory?*

DUNCAN We knew the kids were watching television, a lot of television. But I don't think enough of us were watching enough television to consider it as an integral part of what should be examined in the classroom. And there was popular music. You had all those beautiful lyrics from people like Simon and Garfunkel. … The host subject, English, was ideal for incorporating such media texts into what we used to call multi-media units. You'd take a theme like courage or prejudice, and you'd explore it through a novel, short stories, and a film or maybe song lyrics.

ORBIT *Who was eager to do media literacy? Was there any resistance?*

DUNCAN It was a younger teacher population. The elimination of the Grade 13 external exams meant that the English program at least was not driven by those exams. It gave you a lot more flexibility and encouraged a willingness to experiment. They were really good times. There was also money. So between money, youth, and curriculum, it was a very positive atmosphere. And the teachers who didn't want to get involved just went to the sidelines. But my sense is that the majority were open.

ORBIT *What was the reaction of students? Did they buy into it or just think it was weird not to be reading books or essays?*

DUNCAN I think there was a positive reaction. Mind you, you rarely had a pure media literacy strain, if there is such a thing. Media tended to have a tie-in with a novel. Or, you might think, "Well, this is good for discussion," so Friday afternoon you'd show a film and talk about it. And if you could discuss how it was made, the use of sound, of camera angles, then you could give the students some insights into the construction of film.

ORBIT *Today media education uses what is termed the "key concepts." How did that arise?*

DUNCAN That came when we were doing the *Media Literacy Resource Guide* back in 1986. It was clear that if we were going to address all the different media and genres—film, newspapers, periodicals, music, television, comics—we had to develop some critical tools. And that's when media literacy became a combination of McLuhan, film grammar, ideology—all that kind of theory. So we ended up with key concepts about how media construct reality and have social and political implications, and so on.

ORBIT *Underpinning shifts in media education through the eighties was the video revolution—MuchMusic, MTV, all those. That must have had a great impact.*

DUNCAN Oh, absolutely. That's where the exploration of popular culture started to take hold and, in my own case, even going to shopping malls and having walk-abouts downtown became significant because you were able to look at the culture of everyday life. You were able to see that it's not just film and television, it's everything that surrounds us. From Barbie dolls to GI Joe, all that stuff became recognized as pop culture icons and they deserved as much discussion as a quality short film, let alone a feature film. So when you started to have a broader definition of what media literacy was, and of what culture was, then it opened up a lot of doors for the media teacher. And I think that's what facilitated a major paradigm shift.

ORBIT *At some point, you must have realized that perhaps you needed to look at the theoretical aspects of these pursuits. How did you address that?*

DUNCAN First of all, we should never neglect Marshall McLuhan. He became an inspiration for a lot of people. He was in the news continually; he was always giving his pronouncements on the latest thing, like the Beatles or Twiggy or whatever. And that was good because people started to say, "Look at the way kids are watching television, the way we're being affected by it." … What happened was you got a more detached view of what was happening. And that's where I think theory came to play. And McLuhan was ideal. Because we're talking about the nature of the medium itself, whether it was film, television, or newspapers, and its impact on our senses, the particular grammar of the medium, what things it foregrounded and what it didn't. That gave it an air of excitement. The risk was that if you just simply taught McLuhan and media, it became too narrow. So I think, at least about the mid-80s, Chomsky came in, and John Fiske, and of course, Len Masterman's *Teaching the Media* came out in 1985. He was able to put in a lot of the political stuff—he was very well versed in Paolo Freire's *Pedagogy of the Oppressed*—that you need to have: reflection, analysis, and then action. Masterman politicized media much more than we had. Before we were very apolitical. And I think the political dimension made a difference.

ORBIT *Now, despite the fact that we—media educators—seem to have arrived on some level, there has been pressure to eliminate the stand-alone credit in media studies. And, in fact, it did vanish in the first draft of the latest Ontario curriculum reform, only to be reinstated because of grass roots pressure. What does that suggest about media education?*

DUNCAN The fact that the credit to teach a complete course was in jeopardy shows how fragile the movement is. Even though we've had curriculum guidelines, created resources, been in the news—even though we have had critical recognition of the value of media literacy, all it takes is a conservative government to say, "We need to get back to the basics." So that is a concern that I think we all have. The good thing is that every decade the rationale or need for media literacy has escalated. With the arrival of the home computer and the laptop, and digital media, the real need for media education has increased. So what was fine 15 years ago is not fine now. Information literacy, visual literacy, computer literacy—all of those things that come to the foreground in media studies, have contributed to the credibility of media literacy.

> "… we should never neglect Marshall McLuhan. He became an inspiration for a lot of people."

ORBIT *How is a media literacy course different from an information technology course?*

DUNCAN Information technology tends to be taught or facilitated by those trained as librarians or library resource teachers—how do you classify the materials you have, what are the skills you need in order to locate or place a book in the collection, how do you use this CD or film or web site as a resource? It does look at how a text is produced but, unlike media literacy, it tends to be apolitical and it doesn't really look at the industry or ideological implications. What it leaves out can be, at times, more important, in my view, than what it includes.

ORBIT *It sounds to me like media literacy almost belongs in sociology and yet it's in the English curriculum for high schools, and in language arts for elementary. How do you feel about that?*

DUNCAN It's a blessing and a curse. A blessing to the extent the people who are most accommodating tend to be the English or language arts teachers. So, it's understandable. And it's the same in the U.K. and by and large in Australia, although in some of the U.S. it's within the arts. And in one or two places, it's within the social sciences. In essence, it doesn't necessarily belong in English but the fit is the most comfortable. The curse is that media can become just another text that you teach through, like a novel, which has major limitations, pedagogically. You need to teach *about* the media as well as *through*, and there's no reason there can't be a co-existence between the two … [or] between English or language arts and media. There's no reason for hostility between them … One can use many of the same tools for analysis, and then one can add other tools that are specifically used in media studies. What you get is an enlarged concept of what English consists of—and people might say, well, then you're turning it into cultural studies. In many ways, I think that's true. English is already a form of cultural studies, largely because of the wide range and type of texts used, and more so with the use of media as texts. And when media are inserted effectively, they can raise crucial cultural questions.

ORBIT *It's interesting that in the recent push to increase basic literacy—reading and writing—the approach has been to not locate it in English or language study specifically, but to spread it across the various subject disciplines. Should that be happening with media literacy?*

DUNCAN Ideally, I see no reason why English teachers should have a monopoly on it, and in fact, there is plenty of opportunity in the other subject areas—history, geography, health, physical education, music, science, social studies, etc.—all those courses provide entry points for really solid media literacy. And if you take the key concepts, and you take any of those subjects, we can find ways in which the media have constructed a kind of reality. So for example, in a biology course, a nature program in the vein of *Animal Planet* or any animal documentary could be looked at with a critical eye as much as one might look at a film in an English classroom, using basic media literacy concepts. That is, one would teach through it by examining the information or content it provides, but also about it—how the film or show constructs a particular reality through the use of certain codes and conventions, camera angles, music, and so on, and what values it contains. Teachers are already using media as teaching aids in different subject areas—but that's *through* not *about* the media. Video is being used in, say, a geography class to enhance the students' understanding of land use, but no one is asking who made the video, for what purpose, using what technology, at what cost, intending it for whom, and so on. … All of that is waiting for the teacher who can go beyond just the basics of their subject and look at the broader issues. Media literacy provides the critical tools to help.

ORBIT *Given that elementary teachers don't, as a rule, just teach one subject like English to their students but several over the course of a day, it seems to me that a cross-curricular tool, or set of tools, like media literacy, is a logical fit. Even the term "language arts" suggests a more encompassing approach.*

DUNCAN Yes, and I think the interdisciplinary opportunities are immense. And what will be the bonding agent for those different subjects will be the use of the key concepts that can be applied to various media constructions. The concepts provide an excellent means to sharpen our interpretive skills across all boundaries and disciplines in schools, but also to heighten our critical understanding of the world around us in general.

ORBIT *There has been some criticism that educators are somehow reading into the media, that they are being alarmist. How do you respond to that criticism?*

DUNCAN Well, to "read in" can be positive or negative. It can be positive to the extent that if you don't take an angle on whatever is happening and how it's being represented—it could be a music video, a film, a news story, a comic book—if you don't try to conceptualize it and interpret it, then what is the role of education? It's ridiculous to not read into something; it's how we process our understanding of things, not just of media. Where it becomes bad is where we take the "reading into" as being the final truth, which leads to the protectionist position that assumes that something, like a video game, is inherently harmful, that we have no way to overcome the harm, and that the use of these "harmful" media becomes an addiction, that the user is consumed by it. That type of reading, especially as it is applied to young people, often brings in issues of sex, violence—all that fear mongering—but allows no other interpretation. It assumes that their minds are corrupted, their innocence breached, etc. There's an absurdity going on there, and there's very little solid evidence that these media have that destructive impact. Media literacy isn't about narrowing the beam so much that you can't see the whole picture, but about shedding more light. Our perspective, and it tends to be a very Canadian one, is to take a position in the middle where we don't ignore the possible negative influence but we don't take it as the motor that runs the whole car.

ORBIT *Rather than not have something seen, you'd rather it was viewed through a media literacy frame? It's still a frame, but it's evident and useful, and a fairly broad frame?*

DUNCAN It's a way of seeing, yes. Media literacy can be an alternative to censorship. I think that's a good part of its message.

ORBIT *Sometimes media educators are labelled as "anti-corporate," especially when they heartily embrace certain works that do question our consumer culture and the role of corporations within it. What do you say to that charge?*

DUNCAN There's a good news story and a bad news story here. Some corporations are good corporate citizens, for a number of reasons. And they generate good business from being that way. In the media business globally, because there are really only five media conglomerates that provide 90% of the information and own the majority of the media outlets that people have access to, the ownership and control issues become problematic and crucial. Even though there are more choices, there are fewer voices. And Canada is no different in that sense from the U. S. We are the most cabled nation in the world; and we've got ownership of newspapers and television stations that is almost as concentrated as the American situation, which is horrendous. If we're anti-corporate, we're only anti-corporate because this consolidation means that decisions made push out independent media, knock the smaller television producers or filmmakers out, use the bottom line to undermine diverse points of view, and stifle debate and discussion.

A good corporate citizen supports and is part of the community; they don't set it back or try to dictate the way it thinks by controlling its access through and to media. I could name one station in Toronto that is very responsible and supportive of the community, and in particular of media educators, and asks nothing from us, like endorsements, but still provides resources, and works with us to help us to better understand the industry. The station has provided money to fund workshops and summer institutes, helped with the training of teachers, provided venues for events, made a number of its programs available free to educators, and participated in the writing of curriculum materials. We sense also that the company wants to understand educators and students, and not just as a market or audience but as a community as well. So, any media literacy around corporations has to be given a context. Who is in the driver's seat, I guess, is the issue, the corporation or us as citizens?

Howard Lam

ORBIT *Another criticism of media education is that all it is doing is promoting mass culture—you know, it's the low versus high culture debate. So, when the students are watching television or film in the classroom, they aren't reading a novel, or being exposed to literature.*

DUNCAN This idea of "high culture" and "low culture" is an artificial distinction. People were tending to talk that way 25 to 30 years ago. … All of these things should be subject to scrutiny because they are part of our culture. Whether it's Rush Limbaugh, Jerry Springer, Britney Spears, reality television—these are often considered controversial or superficial—or Dickens, Bronte, Hardy, all are worthy of detailed analysis. These texts tell us about our desires, our fears, our aspirations. They provide archetypes, lessons, and insights—so the distinctions are false or, at least, exaggerated.

ORBIT *Are students eager to talk about the stuff of their lives, current media and such, or are they resistant—this is ours, hands off?*

DUNCAN It depends on the attitude of the teacher and her or his motives in teaching about the media. If it's suggested to the students that popular culture is not worthy of serious consideration—and that can be done in subtle ways, not necessarily stated, like through an attitude of disdain—then you've lost the battle. If you're proselytizing, desperate to indoctrinate or inoculate the students, that's of no value. Whereas if we look at these things as being inherently interesting, and we can have a semi-detached relationship—we don't have to be a total fan, and in fact, I think the best media teachers have one foot in the traditional culture and one foot in the youth culture and so are somewhat detached from both—we can create a good learning environment. And students are willing to even look at things that are very personal and important to them in that situation. And then when there are difficult or emotional events that happen, like 9/11, the class is more receptive and trusting, and the inventive teacher can come along and do excellent work with even such a delicate subject.

ORBIT *To understand youth culture, it sounds like teachers, would have to consume a lot of it, watch TV shows and listen to CDs, play videos games, and such. You obviously do. Are you a media junkie?*

DUNCAN I'm a junkie to the extent that I'm often doing several things at the computer, and the TV is on, and I'm trying to make sense of the plot at the same time that I'm trying to make sense of my email. The key is being selective. You cannot keep up with everything … you have to sample a broad range, and let the students be the experts with their selections, whether it's blockbuster films, celebrities, magazines, or hit television shows. You just have to have some knowledge and understanding of the various media out there.

ORBIT *I suppose if you are part of an organization of educators, like the AML, you do have a community and access to what others know, or use in the classroom. There's a sharing of resources, through workshops or newsletters, or gatherings.*

DUNCAN Yes, and we have teachers who are experts. For example, one of our members is an expert on the *Titanic*. So, he not only wrote about it, he looked at all the film versions and compared the various messages they had, how the story was constructed for each. So, if I want to teach about the *Titanic*, I think of him. If I want to look at cyber-technology, I think of Neil Andersen. Or music, I think of … well, you get the idea. So, we do indeed have a knowledgeable, enthusiastic community, and that makes all the difference.

ORBIT *What would you say would be the components of progressive media education in our society?*

DUNCAN I would want to have teachers conversant with the best in current media and communication theory, from McLuhan to Chomsky to Fiske to Buckingham, to our own Naomi Klein. I'd want them also to be conversant with learning theory, because the way kids are working with and understanding the media is complex. They're doing all kinds of things, creative and critical; they're using multiple literacies. So the teachers need to be on top of what those multiple literacies do; what are the doorways that they're opening or problems they're presenting? I'd want teachers to have a really good grounding in cultural studies, which might include some sociology. And have teachers who are just as interested in teaching *Hamlet* as they are a blockbuster, or the *Simpsons;* and in teaching across subject boundaries. … We need continually to go across the border, past our usual expectations into other territories. To me that's exciting.

Orbit thanks **Ian Esquivel** for undertaking this interview on our behalf.

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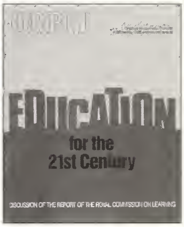
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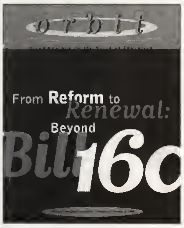

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The Impossibilites of Education

Carl Bereiter

Department of Applied Psychology, OISE

'Up with education! Down with training!' may be taken as the slogan of the Hall-Dennis report. But what is the difference? Training pursues limited, specific goals of skill or knowledge. Education is concerned with the development of the whole person. Yet what can education do about this concern except string together various kinds of training?

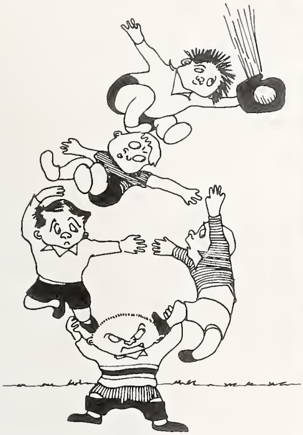
There seem to be two kinds of educational activity that are distinct from training. By far the most common of these may be labeled *phony training*. This has the appearance of training but there is no evidence that it actually teaches what it is supposed to. Real training in the schools is largely confined to the three R's and to memorizing facts. Apart from this, schooling includes a variety of activities that purport to teach problem-solving, creative writing, reading comprehension and appreciation, critical thinking, social behaviors, and certain values and attitudes. Tasks are set or situations are created in which the desired behavior is called for, but no means are available for bringing about the desired behavior if it does not appear spontaneously. Thus the situation is a hopeless one for the child who does not already have what it takes—like a dancing class that starts out expecting the learner to step in time with the music and offers no guidance in learning how to do this.

Phony training is costly and potentially harmful. The prevailing opinion seems to be that, if the objective is important enough, phony training is better than no training at all; but this is shaky ground for justifying it as an activity that takes up a large part of the child's day.

A second type of educational activity centers around a special kind of relationship between teacher and child. The teacher becomes a kind of monitor of the whole growth process. Although the teacher may in part function as a trainer, she goes beyond this to attend to the whole emerging structure of the child's thinking, his personality, and his view of the world. What she does may consist of a host of particulars, pointing out this, praising that, exposing the child to various phenomena and situations, asking questions, arguing, or purposely leaving the child alone for certain periods of time. The intent is not to impose a certain personality or way of thinking on the child, but to help the developmental process along so that it reaches greater heights than it would otherwise. This, as I understand it, is the humanistic view of education, and it is a beautiful concept. It is even found to exist on rare occasions, and it constitutes the ideal of which everyday education is supposed to be a pale copy.

This ideal, which we owe largely to Jean-Jacques Rousseau, has such a grip on the civilized imagination that to give it up seems unthinkable. Nearly every proposal for educational reform, of which the Hall-Dennis report is a clear example, represents a further attempt to bring this ideal closer to reality. But the best plans are not always those that approximate the highest ideals. Sometimes a hard look at reality convinces us that we had better change our ideals.

Reality in this case has to do with resources of educational talent. The educational ideal I have described requires teachers of exceptional intellect and personality—one in a million. Moreover, it requires more teachers of this calibre than there are now teachers of any sort, because we are talking about a very personalized kind of education that cannot be given to children en masse. The Rousseauian ideal could have been realized more easily two hundred years ago than it could today, because at that time there was less demand for education and there were fewer occupations competing for people with the required talents. We



'It is out of play that children develop rules of a game and a sense of order.'
(Living and Learning, p. 57*)*

Aluminum Company of Canada, Ltd

should recognize by now that the die is cast. There may be ways to increase the supply of teachers. There may be ways to attract to the profession more people who have the potential to be true educators. But no foreseeable change can bring us even remotely near to the position where mass education could become in reality a sensitive monitoring of the growth process.

We are left with an educational system that cannot, through any change in its tactics, do what it purports to do. Students grow restive and teachers become discouraged. They see through the phony training. What the educational system has to offer in the way of side benefits–socialization, access to information, contact with the world of ideas–is increasingly available by more attractive means from the world outside. It is time to consider the possibility that if education cannot really be carried out we should quit trying. We should not merely consider alternative forms of education, which is now a popular sport, but consider serving young people by alternative means that have no educational pretensions whatever.

What is valuable in training can be preserved and considerably enhanced ; it does not have to be a grind ; it can even be exciting. By eliminating phony training and useless training (such as a great deal of the memorizing that goes on), the school day could probably be reduced to one-third of its present duration, and the cost of schooling reduced proportionately.

For the remainder of the child's day, it seems to me that the most legitimate and realistic thing we could do is let the child do what he or she wants. At the present time, there is not much for children to do, because the children have been kept out of circulation by the schools. The remaining two-thirds of money that now goes into education could, however, be put to very good use to provide more worthwhile cultural resources for children. If the money were actually spent for this purpose rather than for highways, we could practically transform our cities into perpetual Expos, to the benefit of all citizens and not only of children.

I am still educationist enough to be left with a great feeling of insufficiency when I contemplate this scheme. How do we know children won't just waste their time or get involved in things that are harmful ? How can we be sure they won't grow up stupid, shallow, purposeless, and deficient in the abilities and knowledge society needs ? It is easy enough to say that the schools have not been doing a very good job of guarding against these eventualities, but that is no answer. The idea of the educational monitor dies hard. We want someone in there to make sure that all the right things happen.

Schools have been experimenting with free curricula and even with sending children out on the town, but the educational monitor plays if anything a greater part in such schemes than he does in the conventional school. The Parkway Project in Philadelphia, the 'school without walls,' turns most of the educational task over to community agencies, and yet it requires more monitors than there are teachers in a traditional school of the same size. This is obviously impractical. However well it may work in the particular case, as a model for wide-scale application it must be regarded as a futile attempt to realize the Rousseauian educational ideal rather than to seek an alternative.

As I have suggested, the main trouble with schools is not that good things cannot happen in them but that the effort to make them happen, when there are no effective means for doing so, is unwholesome–and this is true whether or not the schools have walls. As for maximizing children's chances for worthwhile experiences, it seems to me that the odds are heavily in favor of pouring human resources into developing the cultural life of the community rather than into monitoring the child's cultural life such as it is. Even the unlikely chance of a child's falling into the company of an adult who can exert a beneficial, long-range effect on his development is rendered more probable by setting him free to make his own contacts.

Reading Efficiently and Thinking Critically

Robbie Case and Cathy Fry
Department of Applied Psychology/OISE

Over the past year, the authors of this article have developed and tried out a classroom program intended to improve students' skills in reading and thinking. Framed as a set of activities in which the students can both compete with others and work at their own pace, the program has proved highly successful in the one class in which it has so far been tested.

Most students, regardless of their current success in school, could benefit from the development of more efficient reading skills.

Some are *poor* readers. By this we mean they have difficulty with the mechanics of reading (for example, with word-attack skills) and require special remedial help to overcome their problem. Others are merely *inefficient* readers. While they have no difficulties with reading at the mechanical level, they read very slowly, unselectively, and in most cases with poor comprehension. It is for this second group of students – the inefficient readers – that our program has been developed.

The first part of the program, improving general reading efficiency, is designed to help students read more quickly and extract the information they desire with minimum effort. The second part of the program, improving critical thinking, is designed to help students use logic and analysis rather than haste and emotion when criticizing what they read and hear. Many secondary school students (and adults, for that matter) seem to have difficulty in making objective evaluations. They cannot separate value judgments from statements of fact and they cannot determine whether the information an author presents actually proves what he is asserting. The materials in this part of the program are intended for use by students with a wide range of academic abilities and backgrounds.

Taken as a whole, the program emphasizes skills that are useful both inside and outside of the classroom.

Improving General Reading Efficiency

Speed-reading exercises on controlled reading machines. Flexible groups of four or five students read printed passages projected by machines which control the rate at which the material is presented. If a student scores 70 percent or better on the ten multiple-choice comprehension questions which follow each passage, he is permitted to begin working with the machine set at the next highest speed.

This activity is not expected to have much direct value in everyday reading situations. However, it does develop the student's confidence that he can cover material at uncomfortably fast rates and still grasp its meaning.

Skimming and scanning exercises. There are several variations of this activity, which is intended to help the student develop strategies for extracting the main points from a piece of written material without studying every sentence.

Initially, the students work in pairs. One member of the pair underlines what he thinks is important in a 1200- to 1500-word story; the other then reads the underlined parts and tries to answer a question about the story. If he fails to answer the question correctly, both students review the story to see if the necessary information has been underlined.

Later, the students work individually. After some practice in underlining, together with discussion about where important information is often located, the students scan other stories and either answer comprehensive questions or write single-paragraph outlines of the stories.

When the students have become proficient at this, they try skimming books (150 to 200 pages) and writing brief summaries during the forty-minute class period. As a result of the confidence they gain in working with controlled reading machines and the scanning strategies they acquire by skimming through short stories, they soon learn how to pick out the main points from an article, or even a book, in a very short time.

Information search. The purpose of this activity is to teach the students how to use such aids as the table of contents and the index to find *specific* information quickly.

A series of specific questions (and answers) is prepared. The students select questions and try to locate the answers by referring to a shelf of 'source' material – textbooks, magazines, newspapers, and even mystery stories. Each student keeps a record of how long it takes him to find the answer and works to decrease this time.

Experience shows that students improve rapidly in this activity and need relatively little practice.

Improving Critical Thinking

This part of the course begins with practice at considering alternatives other than those which the author or speaker has suggested. The teacher presents a 'fact' and a conclusion which an author has drawn from this fact. When the students have discussed the conclusion, they are asked to suggest a number of alternative conclusions which might have been drawn. They then break into pairs and do a similar exercise with written material. Finally, each student moves to a series of abbreviated 'fact/conclusion' arguments which he handles himself. The object remains the same – not to attack the argument but simply to come up with an alternative conclusion.

When the students have become

accustomed to thinking of alternative explanations and conclusions, the course concentrates on how various alternative explanations can be tested. Concrete experimental situations are presented from the physical sciences, and hypothetical experimental situations from the biological and social sciences. In each example, emphasis is on the method of proof that may be employed and on the faults an alert critic must look for.

After considering criticism in academic areas as diverse as physics and history, the course moves on to consider everyday arguments: how to extract the main assertions from them, and how to apply the same critical skills.

The final part of the course considers logical and mathematical criticism and criticism where value assumptions are hidden but very important. However, no evaluation of this final part of the course has yet been made and further development of it is still being undertaken.

A Game Improving Skills in Both Areas

A verbal detective game offers the students practice in most of the skills they have been learning in the program. First, the students are given a short time to read lengthy descriptions of each of four possible suspects in a murder case. They are then given a series of clues, each of which eliminates either one of the four suspects or one of the four possible motives. The clues have to be read carefully so that the students can decide which suspect or motive (if any) is eliminated by each particular clue. Periodically, the students are given opportunities to review the descriptions of the suspects in order to consolidate their argument. However, the time for review is even shorter than the original time for reading, and requires that the student know what *specific* piece of information he is looking for.

When a student is ready, he presents his case – naming the murderer and the motive. The other students act as 'defense attorneys,' pointing out false or unsupported arguments that the 'prosecutor' is using. The game ends when one student can support his case in such a way that the others cannot refute it.

This game is not played until near the end of the course so that the students have an opportunity to develop beforehand some of the prerequisite skills. In the game they are required to utilize both their general reading efficiency and critical thinking skills.

Evaluation of the Program

During the 1969/70 school year, fourteen students from two regular grade 9 English classes in the Borough of York were selected to take part in the program. The students had scored below the fiftieth percentile on the Nelson-Denny Reading Test (Form A), and their teachers felt they would benefit from taking the program. The group included students from both the four-year and the five-year English option.

After the English and guidance personnel had selected the students to participate in the program, comparison students were matched with them so that their relative progress could be evaluated. The comparison students received instruction in regular English classes.

Two tests were used to evaluate the effectiveness of the program: the Nelson-Denny Reading Test (Forms A and B), which was used to evaluate progress in general reading efficiency, and a critical thinking test, which was used to evaluate progress in critical reading or thinking.

The grade-equivalent scores of the students who participated in the program showed an improvement of 3.5 years on the comprehension part of the Nelson-Denny Reading Test, while the scores of the comparison students showed an improvement of only 0.7 years.

On the critical thinking test the scores of the students participating in the program were again significantly higher than those of the comparison students. In fact, only the three highest scores of the comparison students and the two lowest scores of the students participating in the program overlapped.

Although this was only a preliminary evaluation, results do suggest that the goals of the program were met. There was significant improvement in the students' ability to read efficiently and to think critically.

Any teachers who are interested in trying out the critical thinking part of the program or in implementing a similar reading program should write to the authors, at OISE, for further information.

The Editor of Orbit welcomes letters and articles from teachers and other professional educators. A small honorarium is usually paid for articles accepted for publication.

To Create a Thinking Program for the Elementary School

Floyd Robinson
OISE Northeastern Centre, North Bay

The title of this article describes the goal that a number of OISE researchers and curriculum developers presumptuously set themselves a few years ago. Quite apart from its heroic title, our project seemed justified on the grounds that the development of thinking skills consistently appears near the top of any list of educational objectives, whether constructed by teachers or the general public.

Six years have now passed, and many tons of paper have been processed into the products resulting from the Elementary School Thinking Project, to use the name by which it has become known. During that period of time, members of our group have spent literally thousands of hours studying the thinking behavior of individual children, trying out new methods and materials with small groups of children, teaching in classrooms, and helping teachers to understand and use our ideas. So perhaps the time has now come to render a verdict on the critical question: Can the typical school in Ontario significantly improve the thinking performance of the children with whom it is entrusted?

My own answer would be an incautious and unequivocal *yes*. I believe that enough ideas and related teaching materials have been developed that a school could start now in a small way and build cumulatively to a point where within a few years the thinking behavior of its students would be at a level far beyond what its staff presently believe possible. When we began this project and were groping for some kind of performance standard to describe what we had in mind, we sometimes said that our objective was to double the level of mental functioning of school graduates. Alternately we said our objective was to develop by the end of the elementary school a level of intellectual performance equal to or greater than that now exhibited by high school graduates. Nothing that I have observed in classrooms or in our own test results has caused me to believe that such objectives are in any way unrealistic.

But the cumulative approach necessary to bring this off will not be an easy one for most school staffs, who in many cases will themselves have to learn new concepts and skills and drastically alter some of their traditional ways of relating to students, other teachers, and the broader spectrum of those who contribute in some way to the child's intellectual development. In the remainder of this article I will outline some of the more important dimensions of this needed change.

A Scheme for Thinking about Thinking

The first and possibly most difficult task for the school staff will be to develop a common conceptual scheme for a thinking program. By a conceptual scheme we mean a set of concepts for describing thinking skills more accurately than laymen do, and a developmental scheme or hierarchy that indicates a progression among these skills from the simple to the complex. Without such a conceptual scheme, the individual teacher will have no notion of 'what leads to what,' and hence will not be in a very strong position to do anything systematic. And unless such a scheme is shared among teachers who work at different grade levels and in different subject specialties, the possibility of a cumulative effort is virtually nonexistent.

This is, unfortunately, the situation that exists today. Those teachers who are making a deliberate effort to stimulate thinking skills often work at cross-purposes, without seeing the relationship of their efforts to those of other teachers. A good case in point is the language arts teacher who attempts to do something on 'critical reading' but who does not see that the skills for analyzing cause-effect arguments that she is trying to get the students to apply in their reading have their origin in physical science experiments and derive their meaning from that origin. Another good example is the tendency for science and geography teachers to work their own approaches to problem solving without ever seeming to recognize the commonalities or differences in their approach; the result is that these subjects are seen as completely different domains and there is little visible transfer of thinking skills between them.

The scheme to which our group has been moving recognizes four levels of complexity and organization. At the lowest level we have what might be termed *primitive intellectual abilities,* which appear in young children without formal instruction and irrespective of the cultural milieu into which they are born. These abilities — observing, classifying, seriating, and setting up correspondences are some of the better known — help the child make sense of an otherwise bewildering stimulus world.

Once the child comes to school, however, a deliberate effort is made to develop what might be termed *finding out skills*. These skills — and we may think here of decoding written symbols, computation with numbers, measurement, graphing and tabulating data — have been invented by a culture, and they are deliberately taught in school because they are thought to be a prerequisite for effective functioning within that culture.

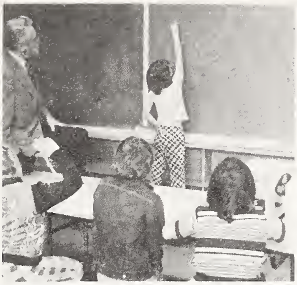
One of the important facets of our approach is a contention that each of these second-level skills can be decomposed into primitive intellectual abilities, and that knowledge of this connection is essential for effective pedagogical intervention. For example, although most schools treat measurement as a somewhat isolated component of the arithmetic program, simple analysis reveals that it is built upon skills of observation and setting up correspondences and that it also depends upon the notion of conservation.

At the next level of organization of intellectual ability the student draws together a number of second-order skills in a more complex episode of intellectual functioning. For example, near the end of the junior grades, or in the early senior elementary grades, the student may learn the notion of an 'experiment.' This concept acts as an organizing device that informs the student what skills are to be brought into play, and in what order, when he is trying to figure out 'what affects what' in a physical system. For example, as he tries to figure out what characteristics of a steel rod influence the amount it will bend, this strategy will inform the student that he should first identify the variables in the system (classification); then identify those that are potentially causal (classification); then vary one of these latter factors (measurement) while holding the others constant and observing the variation in the amount the rod bends (measurement); and finally interpret the result (numerical computation, classification).

These third-level intellectual skills, which we have also termed *problem-solving or inquiry strategies*, have been one of the major foci of our Elementary School Thinking Project. What we set out to do, and did in fact accomplish, was to develop an integrated set of models that would apply broadly across the range of subjects taught in senior elementary grades. These strategies have been found to be effective, results varying from small but significant to large and spectacular gains, and it has become clear that a large part of the thinking component of the senior elementary school program can be organized around this scheme.

In one approach, for example, the initial emphasis is in the language arts field, where students are taught to categorize the questions that naturally occur in the course of becoming familiar with phenomena. Each class of non-factual questions tends to occur in a specific subject area, and the teachers in this area undertake to convey the appropriate problem-solving strategies for answering them; thus the strategy for logical inquiry is taught in mathematics; the strategies for experimental approaches to a cause-effect analysis are taught in science; a strategy for case-study analysis is taught in history; a strategy for correlational analysis is taught in geography; and a strategy for decision making is taught in guidance. But all the strategies are linked together in a progression — and at each stage the particular strategy under investigation is fed back into the language arts program and is employed as the basis for analyzing arguments that appear in the written accounts a student encounters in advertisements, newspapers, and public media generally.

While our own program has focused on these first three levels of thinking skills, we recognize that the attainment of the individual strategy does not complete the mind's attempt to organize its structures into broader patterns of functioning. Let us suppose, for example, that a classroom teacher reads the research on thinking in an attempt to find out what classroom interventions he might make. What this teacher will find in the literature is a large number of studies, many of them reporting the results of individual experiments. So it is clear that the teacher would have to invoke a strategy for experimentation as he reads each new article in order to determine whether its conclusions are to be trusted. And yet the intellectual strategy of a good research reviewer involves something more than this: it has to do, for instance, with what quantity of material will be read before a generalization is formulated, in what order the material will be read, and how individual reports — each relating to a particular context and often in apparent conflict — can be 'added together' to yield an overall picture. While we recognize the importance of trying to identify, describe, and (where appropriate) teach metastrategies of the type mentioned above, such a discussion would seem to take us beyond the scope of the elementary school program and hence beyond the present article.



The author, Floyd Robinson, with an elementary school class.

Facing Up to Unpleasant Facts about Thinking and Schooling

No great enterprise can be founded upon self-delusion, and an early task of the school must be to make an honest assessment of what contribution its program actually makes to the child's thinking abilities. It is easy for the school to become confused here, because children come to it both short in physical stature and intellectually unsophisticated and leave much taller and much more sophisticated. So it is easy to believe that there has been as much growth in thinking as there has been in height, and, moreover, since the school's program is *intended* to develop thinking, that any intellectual growth observed is the result of its efforts.

This perspective has two obvious and fatal flaws. The first is that what the school takes to be intellectual sophistication in graduates is often little more than an enhanced verbal facility, which derives from a larger vocabulary and the use of more complex sentences. Verbal facility is a quality that may be respected in its own right, but it should not be mistaken for thinking. At several points in our investigations we have given the same task to students of different ages, and we have always been shocked to see how little growth there appears to be in the intellectual grasp of the problem once the excess verbiage has been stripped away; on more than one occasion we have concluded after such an analysis that what the high school graduate has really learned is not how to think better, but how to put up a verbal facade to hide the fact that he cannot come to intellectual grips with the problem.

The second flaw, of course, is to attribute whatever growth does occur to the efforts of the school, when the more plausible explanation frequently is that this change is the result of pure maturation or the effort of other socializing agencies. It would appear, for example, that certain structural changes do occur in children's thinking as they get older; these can be attributed to the interplay between inborn factors and a nonrestrictive environment and do not require any special effort of schooling.

The plain fact is that, lofty aims notwithstanding, our schools would be hard pressed to provide evidence that they produce growth in any sophisticated culturally useful type of thinking beyond that which can be attributed to maturation and the effort of other socializing agencies. Indeed, the programs in those areas that seem potentialy rich in opportunities to develop complex thinking soon degenerate into a ritualistic rehearsal of low-level skills.

Mathematics, one of the two main pillars of the elementary school program, offers a good case in point. Very, very early in the game, arithmetic instruction reverts to something akin to mindless rehearsal of mechanical computation skills. We say the exercise is 'mindless' advisedly because — as most teachers will admit, and as a great deal of research has shown — the vast majority of students do not know how to use these computational skills in any sort of realistic problem situation.

And is the situation in the language arts field (to speak now of the other major pillar of the elementary school program) any better? It is probably true that there is a slow but consistent improvement taking place in our schools with respect to students' ability to read quickly and show at least minimal comprehension of what they've read; moreover, with the advent of 'levels' programs in reading, a significant proportion of more capable readers now reach adult standards in speed and simple comprehension by the end of grade 6. But what never fails to shock the observer is the incredible gullibility shown by even these better readers, who, it would appear, do not possess even the rudiments of an intellectual scheme for determining whether or not they should believe the opinions and conclusions in what they read. In the majority of cases this childlike innocence and trust of alleged authority appears to persist into adulthood.

So while the school must continue to propose lofty goals, and send optimistic messages out toward the general public, it is necessary for any subsequent action that a school staff try to make an honest appraisal of its actual accomplishments in the improvement of thinking performance.

Putting Some Oomph into Our Thinking Pedagogy

The traditional pattern for local curriculum development is one in which committees of teachers meet together to share experiences and ideas, and from this sharing to propose modifications in present practice. This approach works fairly well when teachers are dealing with a type of behavior for which the school has built up a considerable body of professional knowledge. But it fails utterly, however, when the objective is the development of some new kind of skill, or a radical improvement in the standard of performance in a conventional skill.

We attribute a large part of whatever success we have attained in our thinking program to the opportunity team members had of spending many hours studying the thinking performance of individual children. But teachers themselves must do this if they are to check out a conceptual scheme for thinking, for secondhand accounts cannot adequately convey the required sensitivity to the phenomena. Even more important, perhaps, novel ideas for intervention are more likely to emerge when the teacher remains closely tuned to the child's ongoing work — that is, in a one-to-one situation. Third, and this above all else, it is no secret that many of the significant cognitive leaps occur in the same one-to-one situation, where the teacher can judge the precise moment to force such a leap and can devise a teaching vehicle that is particularly right for this individual child. As an indication of the magnitude of the effect of this personalized knowledge and individual teaching we very early developed the rule of thumb that what the teacher was able to do in the way of developing thinking skills in the large-group situation we could comfortably handle two grades lower with small groups of children, and four grades lower with individual children.

Now there was a time, and that not so many years ago, when teachers could have acknowledged such discrepancies in performance with equanimity, asserting that: 'We know we could do wonderful things if we could observe individual children and teach individually, but you simply have to face up to the realities of the classroom.' But this reasoning is beginning to sound a bit hollow and suggests something other than lack of opportunity. For as far as the observation of individual children is concerned teachers now have available a number of professional development days that could be much better used for that purpose than for the various types of 'entertainment' that are being thrown into the gap, often at the last moment, to give the appearance of planned activity.

And as far as individualized instruction is concerned, one of our members has produced massive documentation for the proposition that schools can increase their effective manpower in the primary grades by a factor of two or three by simply recruiting and putting to use unpaid voluntary helpers of all kinds — parents, older students, senior citizens, members of professional associations, and the like.

A Remaining Conundrum: Creating the Right Motivation for Thinking

There are some very significant ways in which school climates must change if they are to foster the development of thinking skills. At a fairly superficial level of analysis, it seems obvious that the school that wants to teach thinking must be prepared to abide by the troublesome implications of student thought. At a certain phase the student will sharpen his newly acquired thinking skills on whatever material comes to hand, and the decisions and judgments of teachers and principals may become favorite targets for this expertise. We have seen inquiry-trained students, for example, openly challenge the decisions of a principal on the grounds that his solution was based on an inadequate conceptualization of the problem and was inferior to theirs. Such intellectual muscle-flexing could be disturbing to the teacher or principal who plays the omniscient role.

It is one thing, however, to tolerate and encourage the barbs and rasps of a budding thinker, but this says little about how these skills should be taught in the first place. This is an issue on which our group has remained divided. Some of us have seen nothing wrong with the approach that says, 'Let's lay specific skills on students and let them get their kicks from exercising a newly acquired competence.' Another group has argued for an appeal to the child's natural competitiveness and for the introduction of a broadly based set of thinking skills through the use of classroom games. And still another group takes the position that intellectual strategies should grow out of the student's experience, as a formal recapitulation of what he has been doing intuitively in his efforts to find out for himself. Difference of opinion is rooted in differing philosophical views on the nature of human motivation and growth; and while there is undoubtedly no final answer, developing a comprehensive thinking program in a school requires that a staff think through its position on these matters.

Summary and References

This article has sketched the general conceptual scheme that unites the several segments of OISE's major thrust in elementary school thinking and has touched on some of the problems that attend the school's attempt to develop a comprehensive effort toward the improvement of thinking ability. For the specifics of the program developments in greater detail, the reader is referred to the following:

For a general account, see F. G. Robinson, J. Tickle, and D. W. Brison, *Inquiry Training: Fusing Theory and Practice* (Profiles in Practical Education No. 4, OISE, 1972).* For a brief account of methodology see F. G. Robinson and D. Story, 'Teaching a Model for Experiments' (Northeastern Centre, 1973). The complete program is found in F. Robinson et al., 'Inquiry Training Program' (Niagara Centre).

For an overview of primitive intellectual abilities, see L. Popp et al., 'Basic Thinking Skills' (Niagara Centre, 1974). See also E. Regan and K. Leithwood, 'Grade One Thinking Units' (OISE, 1973). For specific accounts of how primitive intellectual abilities are developed into finding-out skills, see Mathematics Learning Study Group, 'Classification and Logic' (Niagara Centre, 1972); J. P. Robinson et al., 'Rate and Ratio' (Niagara Centre, 1973); Measurement Learning Study Group, 'Measurement Monograph' (Northeastern Centre, 1973).

For an account of how the proposed scheme for thinking relates to critical reading, see 'Critical Reading Monograph' (Northeastern Centre, 1973).

For the use of volunteers, see F. Robinson, D. Brison, H. Hedges, J. Hill, and C. Yau, *Volunteer Helpers in Elementary Schools* (Profiles in Practical Education No. 1, OISE, 1971).* Numerous other materials have also been prepared by H. Hedges, Niagara Centre.

For developing skills through games, see C. Bereiter et al., 'Thinking Games' (OISE, 1973). For the experience/intuition viewpoint, see R. Kenzie, 'From Self-Directed Inquiry to Experimentation' (OISE, 1974), and R. Kenzie, 'Toward a Concept of Self-Directed Inquiry' (OISE, 1974).

*Available from Publications Sales, OISE. Inquiries for all other materials listed should be addressed to Irene Leps, Office of Field Development, OISE.

Note: The main participants in the Elementary School Thinking Project have been Valerie Anderson, Carl Bereiter, David Brison, Glen Evans, Cathy Frye, Hank Hedges, Jane Hill, Bob Kenzie, Ken Leithwood, Irene Leps, Jim Love, Len Popp, Ellen Regan, Floyd Robinson, Paul Robinson, Howard Russell, Pat Sullivan, and John Tickle. This diverse group has never been entirely of one mind, and the present article purports to reflect the views only of the author.

Knowledge-Building Technologies

Beyond Information Access

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The Royal Commission's recommendations on technology are sane and sensible — and ten years ago they would have been considered forward-looking. For, ten years ago the software available to schools consisted of lots of programs for doing this and that — programs of highly variable quality, calling for Circular 14-type screening — plus business productivity software adapted for student use. That is still mostly what is in use in schools. In the hands of creative teachers, it's possible to do great things with it. But we have also seen it used in some of the worst teaching we have observed.

The irony is that ten years ago a Royal Commission would have noted that Ontario was a leader in educational technology. Somehow that lead was lost. There is no suggestion in the current report of regaining leadership or of a guiding vision. There is more the feel of Ontario as a discriminating consumer, not a creator of mainstream technology. To the Royal Commission, it seems, innovation consists of model-school projects using off-the-shelf technology. That, too, was a forward-looking idea ten years ago. It was the idea behind the Apple Classrooms of Tomorrow program. It is interesting to note, however, that Apple's first venture into advanced educational software did not come out of their model classrooms. It came, in fact, from Huron Street Public School in Ontario, and CSILE (Computer-Supported Intentional Learning Environments) is a technology developed at OISE. In its press release of CSILE (termed Collaborative Learning Product by Apple), Apple Inc. states:

> **Apple Introduces Ground-Breaking Product For Collaborative Learning**
> During a meeting of key education press at Apple headquarters today, the company introduced [the] Collaborative Learning Product, an integrated, research-based product and the first collaborative learning offering available for the K-12 education market. The Collaborative Learning Product allows students to build their understanding of a topic by working in discussion groups while sitting at personal computers. Using the specially designed collaboration software, students are able to send electronic notes to one another to discuss events, examine factual information and raise and address questions. Once they have entered their responses to one another in a shared database housed on a workgroup server, they can hone their ideas as they add comments to the growing discussion.
>
> Unlike bulletin-board services or electronic mail, the network-based product provides a structure for student-centered inquiry that extends the learning process beyond the traditional boundaries of fact presentation and recall. Classrooms using this product will be able to engage in

"knowledge construction" through a process that entails problem statement, theory presentation, comment and the introduction of new information.

"We've been using collaborative learning for a long time," notes June Fuji, a teacher at the Ohlone School in Palo Alto, Calif. "What this product adds is a structure for writing and knowledge building. It's designed so that many students — even in different classes — can work together. And because it permits students 'think time,' it provides a more even playing field."

This product is the result of years of education research...and directly addresses the education reform recommendations detailed in the SCANS (Secretary's Commission on Achieving Necessary Skills) Report, published in July, 1991 by the U.S. Dept. of Labor. This report highlighted the need for students to learn a set of skills critical to success in the workplace of the 21st century. These skills include the ability to organize resources, to work with others, to learn a variety of technologies, as well as the ability to acquire, understand, and evaluate information.

As the Apple release suggests, the CSILE technology invented at OISE represents a new generation of educational technology. It is not business software retooled for children; it is technology specifically designed to support knowledge construction. It provides more than a set of tools. It provides an environment to support the kinds of inquiry, information search, and discussion that go on in research teams and knowledge-building groups of all kinds. Accordingly, we call it "knowledge-building technology." We have been working on the development of knowledge-building technology for nine years, and are happy to see this work influencing technology developments elsewhere. The Schools for Thought project, centered in St. Louis, is probably the most deeply innovative educational development project of its scale anywhere. And it not only uses Ontario-based technology, but its project director, Mary Lamon, is a Canadian, living in Toronto.

> The irony is that ten years ago a Royal Commission would have noted that Ontario was a leader in educational technology. Somehow that lead was lost.

CSILE was built originally on the Ontario-invented and developed ICON computer, which was far enough in advance of the field to give us a substantial lead with networked architectures. Only years later, with support from IBM and Apple, was CSILE exported to IBM then Macintosh platforms. Ironically, it is now claimed as an Apple invention, addressing learning guidelines put out by the U.S. Department of Labor. Andrew Nikiforuk, writing for the *Globe and Mail* in 1992, suggested this sort of thing would happen, that if Canadians do not seize opportunities for leadership they will have to settle for the branch plant status that the Royal Commission seems to take for granted.

Ontario has the potential to lead, and should be taking steps to realize that potential. A first step will be rethinking the recommendations set out by the Royal Commission.

Contrasting Recommendations: Learning, Teaching, and Information Technology

To give a sense of the way the Royal Commission has approached educational technology, I have abstracted from their recommendations phrases that indicate the action they propose. The first thing to note is that virtually all the actions are to be carried out by the Ministry of Education and Training. Beyond this, however, the action phrases themselves strikingly reveal the kind of thinking represented in the Report.

Key Technology-Related Actions Recommended by the Royal Commission

Actions to be carried out by the Ministry of Education and Training:

- tabulate available resources
- create a clearinghouse
- facilitate alliances
- develop standards
- develop licensing protocols
- support high-profile and diverse projects
- approach other ministries
- co-ordinate efforts to distribute surplus computers
- increase the budget for purchasing
- ensure Circular 14 assessment of electronic materials
- identify priority areas in which Canadian content and perspective are lacking
- promote production
- support projects to extend access
- upgrade Contact North from audio to interactive video

Other actions, not necessarily carried out by the Ministry:

- make educational use of information technology part of the curriculum for teachers
- promote professional development for "appropriate use of information technology in the classroom"

Summary: Themes Underlying Royal Commission Recommendations

Three themes are evident in these recommendations: (a) access, (b) centralized control, and (c) implementation. Overall, the recommendations are a blueprint for bureaucratization, not innovation.

Conceptual Framework for an Alternative Set of Recommendations

At the same time that the Royal Commission was conducting its interviews, Carl Bereiter and I were conducting a special project on school reform as fellows at the Center for Advanced Study in the Behavioural Sciences in California. In this capacity, and subsequently as Scholars-in-Residence at the American Institutes for Research, we conducted an international study of school reform projects, focussing on those that are yielding substantial educational gains. These studies were conducted over the same time period as the Royal Commission investigations. A summary review of trends that we found to be associated with significant educational initiatives follows.

1. *Constructivism as the dominant view of learning espoused by contemporary educators* (Duffy & Jonassen, 1991). According to this view, subject-matter learning arises from students' own

efforts to understand the world, driven by their own perceived knowledge needs, with books and other information sources serving as tools in knowledge construction rather than as direct sources of knowledge.

2. *Increasing concerns about reconciling the constructivist view with individual students' needs and with societal goals*, as expressed in curriculum standards and the like. An entire issue of the *Journal of Special Education* (Harris & Graham, 1994) was devoted to such concerns.
3. *The shift in educational computing from single-user instructional software to networked software* to support collaborative inquiry (Pea, 1994).
4. *Increasing focus on understanding as the central goal of instruction* and as the goal driving educational reform (Perkins, 1992).
5. *The "rhetorical turn" in education and epistemology*, viewing knowledge as something constructed primarily through social discourse (Bruner, 1990).
6. *An increasing concern with establishing and enforcing standards* in elementary and secondary education.
7. *An enlarged conception of education, which sees it as a function of the whole society*, with schools playing an important role but one deeply imbedded in a dynamically structured "learning society" (Keating, in press).

All these issues are recognized in the Report of the Royal Commission on Learning (1994). However, the means of dealing with them coherently, at either a conceptual or a programmatic level, are left unspecified. With due regard for the very large scope of the Royal Commissioners' inquiry, we may note that they largely overlooked the potential of information technology to play an integrative role in their vision of a society committed to learning. The computer was treated primarily as a classroom tool. This is understandable. As the Commissioners noted (Vol. IV, p. 5), widespread attention to the "information highway" and its implications was just emerging during the period of the inquiry and would not have figured prominently in consultations.

A fundamental part of the "learning society" concept is embodied in the Royal Commission's treatment of "community education." It is that the stakeholders should also be contributors. Thus, the proposed school-community councils have the dual role of representing the stakeholders — segments of the community to which the school is accountable — and at the same time enlisting them in contributing in various ways to the educational process. The same reasoning, however, applies to other kinds of connections. Secondary schools have a stake in the outcomes of elementary education, and post secondary institutions have a stake in the outcomes of secondary. Should they not, accordingly, be contributing? And are there not possibilities of contributions flowing in the reverse direction — from elementary school students to secondary or postsecondary students, from school students to teachers and teachers in training, and from any of these to the formulators of curriculum guidelines and standards? Carried to its logical limit, community education may be envisaged as a fully interacting network of people in all parts of the community who are simultaneously learners and contributors to the learning of others.

A the same time that the Royal Commission was conducting its interviews, Carl Bereiter and I were conducting a special project on school reform.

But how could such a complex network actually function? This is where computer-based communication networks may enter the picture. The Internet already serves to link a great diversity of people, although organizing this diversity in functional ways remains a challenge for technology and social design. The following are some observations on educationally-relevant linkages. (These are undocumented, based on direct observation or informal reports of colleagues.)

- There are many network conferences dealing with education, which are successful in that there are active participants who appear to profit from their involvement; but active participants usually represent only a small fraction of those eligible to participate.
- The most successful classroom uses of wide-area networks have been for cross-school research projects, such as ones organized by the National Geographic Society. These are typically designed on an opportunistic basis, however, rather than on the basis of curriculum requirements. They pursue topics such as climate and dialect differences, which lend themselves to comparing information that students collect in different localities. Basic topics in science, which typically pertain to phenomena that do not vary geographically (physiology, electricity, etc.), thus tend to be neglected.
- Electronic mail links have been used as a way for scientists and other subject-matter experts to contribute to classroom learning. Serious problems with this approach have appeared, however:
  — The workload for volunteers is very high, raising doubts about sustainability.
  — One classroom seems to be about all a single volunteer can handle, raising doubts about scalability (there are far more classrooms than there are prospective knowledgeable volunteers in most subject-matter areas).
  — Volunteers often have trouble responding to questions at the appropriate level or in educationally desirable ways; some educators talk of providing training for volunteer subject-matter experts.
  — Students may not make good use of experts' time and knowledge, asking questions to which they should be able to find answers themselves. Hence, teacher management may be required.
  — At a deeper level, many educators have misgivings about the whole process, because it seems contrary to constructivist principles. It implies that knowledge is "out there" in the minds of experts, not something to be constructed through the students' own efforts to make sense.

The problems noted are not peculiar to

the network medium. The same problems with volunteer subject-matter experts could occur, and might even be intensified, in a program that called for their personal presence in the classroom.[2] An advantage of the network medium, however, is that the technology can be redesigned in an effort to remedy the problems.

An important agenda for school reform is experimentation with alternatives to the technologies currently in use for educational networking. Virtually all educational uses of networks are based on e-mail or file transfer.[3] Although these are immensely valuable technologies in their own ways, neither one lends itself very well to collective activity or to the sustained build-up of knowledge. These purposes are more directly served by a shared database, which participants may use and contribute to in various ways. In the business world, Lotus Notes™ is the prime example of such an approach, and it is being widely adopted by businesses setting out to become "learning organizations." Notes, and the approach it embodies, is perceived to be so important to the future of business computing that it was the primary motivation for IBM's recent three billion dollar buyout of Lotus Development. In the education world, CSILE™ is the prime example, antedating Lotus Notes by several years (Scardamalia, Bereiter, McLean, Swallow, & Woodruff, 1989). The head of collaborative research for Lotus Development Corporation referred to CSILE as "probably the leading example of groupware technology used in classroom settings." It has directly influenced components of other groundbreaking projects, for example, the Collaboratory Notebook of Northwestern's CoVis project and Georgia Tech's CaMILE.

An Alternative Set of Recommendations

Based on socio-constructivist epistemologies, analysis of school reform initiatives worldwide, and our own experimentation and evaluation with new knowledge media, we suggest the following sorts of recommendations.

- Reinvent schooling in the context of a knowledge-building society

Create models for knowledge advancement extensible to all sectors of society, with schools integral to cross-sectorial communities for learning and knowledge creation, not a world apart. The Royal Commission proposes a model for "Community Education" that is consonant with such a model, but its recommendations for information technology read as a different mission altogether.

- Create novel funding structures and alliances that favour education-first technologies

At present, our school technologies are vendor-dominated, favoring productivity and presentation software designed for business use and a wide variety of educational applications that lead to fragmentation of curriculum. The Integrated Learning Systems designed to produce coherent packaging of educational materials are proving disappointing. Alternatives that put knowledge-building at the heart of the design challenge are needed.

An important agenda for school reform is experimentation with alternatives to the technologies currently in use for educational networking.

- Democratize processes of invention and society's knowledge resources

New technologies provide new opportunities, as well as dangers. We must use educational technologies in ways that turn diversity into a strength rather than creating underclasses. The system we have been developing is distinctive for demonstrating the *absence* of significant differences in participation between males and females and between those who, measured by standardized achievement tests, are at the lower-and higher-ends of the ability spectrum. More importantly, diverse contributions help to lift the whole process. We need to take as a design challenge the creation of technologies that benefit all users.

- Explore the power of distributed versus centralized processes

The most effective research and innovation efforts demonstrate the power of distributed versus centralized processes, and suggest potential conflict between centralized curriculum initiatives and student-driven inquiry, and between mandated assessments and self-initiated efforts at educational advancement. As suggested below, new programmes of research are needed to provide creative solutions.

- Encourage research and invention to channel opportunities of new knowledge media for more effective education and the creation of a knowledge economy

New opportunities include:

- — virtual job opportunities, practica for professional development, and meeting grounds for those working on parallel problems
- — novel uses of volunteers and retirees
- — special facilities for inclusion of all members of the populace
- — administrators, experts, and curriculum writers as on-line knowledge workers, not distant figureheads
- — student creativity used in the service of a knowledge economy

- Replace outmoded curriculum and evaluation processes with systems for local autonomy with global relevance

New technologies make it possible for teachers and students to be at the heart of curriculum and assessment processes. In the past, a delivery model for curriculum and standards may have been needed — with experts establishing content guidelines, curriculum writers translating these into forms deliverable to teachers, and students treated as the end-of-the-line consumers. With new knowledge media, teachers and students are positioned to contribute creatively to curriculum designs and resources, with curriculum experts and evaluators participating in the process, not standing outside and above it. Such initiatives will occur on a global scale, so Circular 14 type screening is well off the mark. New systems are needed to support fast-paced, global processes for continual improvement, as opposed to outmoded and lengthy cycles of curriculum publication.

- Demonstrate superior educational achievements

Rather than investing in schools to show off technology, we need to invest in schools that demonstrate new possibilities for educational achievement. This does not mean, primarily, improved test scores — although successful technologies produce those as well (Scardamalia et al, 1992). It means levels of knowledge and thinking that go beyond the modest expectations of mass assessments and that would give Ontario graduates a privileged position in the global knowledge-based economy. Will such schools also function to demonstrate educational technology? If not, something is wrong with the technology.

Comparison Between the Royal Commission and Alternative Recommendations

The Royal Commission's recommendations, summarized above, are concerned almost entirely with measures to *promote* and *regulate* the use of computer technology. They are consistent with other recommendations of the Commission, relating to centralized curriculum planning and evaluation. All in all, they represent a bureaucratic, top-down managerial approach to educational reform. As is characteristic of such an approach, it is cautious and short on vision. I personally do not think it is an approach that can keep Ontario in the running during the next decade. It is aimed at enabling Ontario students to do the kinds of work that schooled people all over the world are now able to do, and usually for less money. The alternative recommendations are based on the view that there have, in fact, been major breakthroughs in technologies for education and that the leading countries in the next decades will be the ones that are most successful in taking advantage of and further advancing those technologies. These are technologies for building and working with knowledge.

It has to be reconceived as part of a society-wide effort aimed at advancing the creation, distribution, and utilization of knowledge.

Possibilities exist, however, not only for harmonizing centralized curriculum planning and evaluation with student-driven collaborative inquiry but also for coordinating these objectives with two others arising from Royal Commission recommendations: greater community involvement in school-level education and better connections across different levels of education and between education and work. These intriguing possibilities arise from the greatly expanded opportunities that wide-area network communication affords for interaction among previously separated individuals, groups, and spheres of activity. Research is essential for determining the feasibility of the following:

- Engaging students in implementing the curriculum guidelines and standards that apply to them.
- Creating overlapping communities of inquiry involving elementary, secondary, and university students, their teachers, working scientists, and interested parents and others, all working within the same general problem area.

Educational policies adequate for the 21st century cannot be created simply by analyzing current needs, studying projections for the future, and trying to balance the two. The result will be cautious compromise. That, more or less, is what has come to us from the Royal Commission. But the 21st century is being created right now. It is being created by innovative industries around the world, in poor nations as well as rich, and by governments trying to regulate and at the same time spur on the development of knowledge-based enterprises. The question for us is whether education will have an active role in creating the future or whether it will just be a "resource provider." In order for education to have an active role, I believe, it has to be reconceived as part of a society-wide effort aimed at advancing the creation, distribution, and utilization of knowledge.

Where to Next?

In 1992, a *Globe and Mail* report warned that another Canadian invention was heading South. Writing about CSILE, Nikiforuk said "Although U.S. school reformers hail it as a novel program that could well shape the schools of tomorrow, CSILE remains an almost unknown pedagogical tool among Canadian educators." It is now three years later, and the problem is more extreme. Ontario is the one place where the proposals and the technologies that afford them have failed to engender significant involvement. In contrast, educators on four continents are working with us to advance on projects of the sort suggested above and to use the technologies built here. Many are additionally providing financial support as Founding Members for a new CSILE initiative aimed at having educators take charge of their own technologies.

Educators on four continents are working with us to advance on projects of the sort suggested above and to use the technologies built here. Many are additionally providing financial support.

Ontario could be in a uniquely advantageous position to focus on the problems of maximizing knowledge construction through networked, multimedia technologies. Other Ontario development projects of significance in this context include First Class™, Telepresence, the Dynamic Graphics Project's collaborative multimedia tools, and the CARATS research project. Knowledge-building technologies of the sort we describe fall in the networked solution/multimedia categories projected as a billion dollar curriculum industry by next year. The potential for significant economic as well as educational gains from backing knowledge-building technology is high. We suggest Ontario put in place recommendations that support invention and that channel research to make today's educational visions a vital part of tomorrow's reality.

NOTES

1 The conceptual framework and research reported in this analysis are based on writings co-authored with Carl Bereiter. I would like to acknowledge the efforts of the entire CSILE team, without whose contributions the work reported here would not have been possible.

2 Incidentally, we do not question the value of personal visits to classrooms, especially for establishing rapport and for role modeling purposes. We see these, however, as supplementary to some more sustained kind of involvement in the educational process.

3 Conferencing software is essentially e-mail with 'threads' connecting sequentially related messages. Bulletin boards are different, but their use in education has been incidental.

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Shopping for Schools

THE FUTURE OF EDUCATION IN ONTARIO?

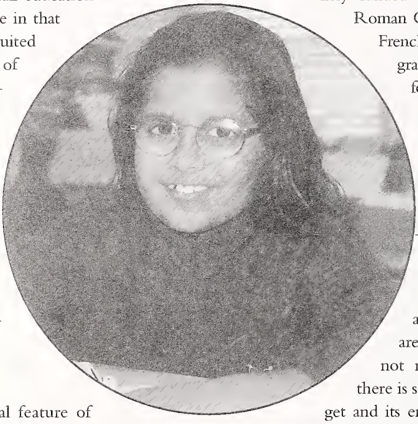
Kari Dehli
Professor, Sociology
and Equity Studies
in Education
OISE/UT

During two weeks in October and November 1997, Ontario witnessed an unprecedented strike that closed all of the province's public and Catholic schools. The five affiliates of the Ontario Federation of Teachers took this action in response to the Conservative Government's Bill 160, The Education Quality Improvement Act. In contrast to what the Bill's name suggests, the teachers argued that this legislation would not improve education quality. Rather, it would centralize power over education in the provincial cabinet and allow the government to cut hundreds of millions of dollars from the education budget. In spite of the teachers' protest, which garnered a huge groundswell of support, particularly among parents, the Bill was passed. What will the government be able to do with its new powers? How will parents figure in the new regime of Ontario education?

Although not referred to in Bill 160, and not at this time on the government's agenda, the privatization of Ontario education has become an increasing concern for educators and parents. This is because many of the changes introduced by the government create conditions in which market-driven forms of schooling could be established. In this context, I focus on one variant of market-driven school reforms — commonly referred to as "school choice" — where public and private schools compete for students in an environment of open enrolment and per capita funding.

While a fair degree of choice exists already in the Ontario school system, market-driven competition among schools for "consumers" would represent a radical departure. This may well be the next step contemplated by the government, and recently the *Globe and Mail* advocated for such a market system of choice on its editorial page (January 19, 1998). What can researchers tell us about how such programs work and about their effects? Can choice programs deliver what they promise?

Two claims are often made by school choice promoters — namely, that such systems enhance overall education quality and that they are more equitable in that every child can gain access to a school suited to their needs. I provide a brief review of emerging research of how choice programs operate in practice. I have considered studies from several countries from a standpoint that sees questions of equity as integral to questions of quality. Education reforms that purport to promote school improvement must be measured in terms of their capacity to enhance learning for all students, including and especially those who have historically been ill-served by the education system.



The International Context

Systems of school choice are a central feature of several countries' recent school reforms, as governments seek to "restructure" education to meet "the challenges of the new global economy." These programs are controversial and the rhetoric promoting or attacking them is intense. Claims in favor of choice programs suggest that they will lead to innovation, higher achievement, broaden opportunities, and "empower" families to obtain the education their children need, while the state is seen as an inherently inefficient, costly, and bureaucratic monopoly run by administrators and self-interested union bosses who resist change. In contrast, the market is painted as naturally free, dynamic, efficient, creative, flexible, and less costly, driven by risk-taking entrepreneurs and smart consumers (see Chubb & Moe, 1990). Those who oppose such reforms argue that education markets threaten to undermine public education, that meaningful choices remain elusive for most families, and that racial minority, immigrant, poor, and working class students, in particular, stand to lose from choice programs.

Wherever open enrolment plans have been introduced, they have been accompanied by some or all of the following initiatives: substantial budget cuts and per capita funding models; centralization of curriculum and financial decisions; regular, standardized testing and publication of school-by-school results; performance or outcomes based evaluations of administrators, teachers, and students; reduction of the scope of collective bargaining for teachers, as well as sustained rhetorical attacks on teacher unions; creation of quasi-autonomous regulatory bodies to manage such areas as teacher qualification and testing; moves to school based management; and calls for greater parental responsibility for children's learning and community involvement in school governance. This is a familiar list for anyone who has followed changes to education in Ontario in the past few years.

Ontario has had versions of regulated choice within publicly funded school systems for years, including Roman Catholic and French language schools, French Immersion programs, gifted programs, alternative schools, and special focus secondary schools in music, the arts, technology, and so forth. Choices are limited by geography and by regulations requiring schools to admit all pupils within a geographic area before "out of district" children are accommodated. Private schools do not receive government funding. While there is some relation between a school's budget and its enrolment, many other considerations are part of how funding levels are decided. In contrast, market-based, competitive choice programs have more or less open student enrolment plans and per capita funding, where a greater portion of a school's funding is tied to enrolment. Here (some) students become valuable "commodities" as grants follow them to the school of their choice. Families may actively choose a school, rather than settle for one in their neighborhood.

England and Wales, New Zealand, and parts of Australia have moved quite far in this direction of market-driven choice and a number of researchers have begun to track the effects of such programs (Ball, 1993; Bowe, Gewirtz, & Ball, 1994; Gordon, 1994 & 1995; Clune & Witte, 1990; Wells, 1993; Fuller & Elmore, 1996; Smrekar, 1996). What they suggest first is that local contexts matter a great deal to how choice programs work, who is able to take advantage of them, and how effective they are. Researchers who have traced how families make choices have found that this is a complex and drawn out process. It cannot be compared with shopping

for a video or a new coat. Educational choices are based on a variety of criteria, some of which have little to do with the academic reputation of schools. In fact, studies suggest that specific features of educational programs play a minor role in many families' school choices (David, West & Ribbens, 1994; Fuller & Elmore, 1996). For some, safety, distance, and transportation are important, while others value the familiarity and responsiveness of a neighborhood school (Wells, 1993). Other studies suggest that choosing a school is a different process for working class and poor families than it is for the middle classes and the rich. They argue that while there are some important variations both between and within racial and ethnic minority groups, issues of "race" play an important role in more than a few families' choice-making (Wells & Crain, 1996). It is a formidable addition to women's domestic responsibilities requiring time, access to knowledge, resources, and transportation. While many women doubtless enjoy doing this work, it is quite another matter for public institutions to assume and rely on the disproportionate sacrifices that women must make for the system to "work" (David, West, & Ribbens, 1994; Smith, 1996). Choosing schools in an open market system is extraordinarily hard work if it is to be done well. Across social groups, this kind of work, work like other kinds of school involvement typically falls to mothers.

Choices are not made objectively or even idiosyncratically. People in different social groups — rich and poor, for example — choose or are able to choose differently.

School choice and Education Improvement

There is no systematic evidence that competitive school choice environments improve student learning. Reviewing dozens of studies, two U. S. researchers wrote that in the absence of systemic reforms offering real and accessible public options, "it is unlikely that choice will do anything other than simply move high achievers around from one school to another, mistaking the effect of concentrating strong and motivated students for an effect of the school or the choice system" (Fuller & Elmore, 1996, p. 200). Choices are not made objectively or even idiosyncratically. People in different social groups — rich and poor, for example — choose or are able to choose differently. Similarly, historical, political, and economic factors in the local context shape the choices that are available.

While promoters of choice highlight how families are able to make active and informed selections, some studies have indicated how schools actively choose from among those who would like to enrol. Even when governments impose restrictions on the ability of schools to screen out minority students, poor children, ESL learners, and children with special needs, popular schools are nevertheless able to pick and choose "the best" applicants. Moore and Davenport (1990), for example, traced how teachers' decisions about who to admit to popular schools of choice systematically favored middle-class and white students, even when school policies and teachers themselves stated that their intention was to work toward equity. In other words, directly, or indirectly, "race" and class figure in popular schools' enrolment decisions, often in ways that increase segregation, social divisions, and school achievement (Vincent, 1992; Gordon, 1994)

Some researchers have interviewed members of those families (in some locations a majority), who do not actively choose a school (Clune & Witte, 1990b; Bowe, Gewirtz, & Ball, 1994). These are families of students who remain in neighborhood schools that accept everyone. In some areas the negative effects on these schools are beginning to show up, as motivated and high achieving students — and their vocal families — move out. On the other hand, U. S. researchers interviewed African American students who returned to their neighborhood school because they experienced their school of choice as racist, because they had few mentors, or because they lacked practical supports such as transportation (Wells & Crain, 1996). These researchers argue that if public education is to mean anything, meeting the needs of those who are able to take advantage of choice is not enough.

In spite of the promise that market mechanisms will allow creativity and diversity in educational programs, there is little evidence that choice policies to date have generated any substantial innovations. If anything, research from England and Wales, which has one of the most extensive versions of choice programs, indicates that when schools have to compete for students, they tend to adopt "safe," conventional and teacher-centered methods, to stay close to the prescribed curriculum, and to tailor teaching closely to test-taking (Menter et al., 1995; Edwards & Whitty, 1994; Whitty, Edwards, & Gewirtz 1993). While this may reassure some parent consumers and secure good scores on standardized tests, it should not be confused with improving the quality of education. One U. S. research team concluded that "there is strikingly little evidence that enhanced choice triggers the kind of educational improvement on the supply side that its advocates predict and little evidence that active choosers are looking for distinctive educational programs when they make their choices" (Fuller & Elmore, 1996, p. 199).

One of the claims of choice promoters is that the market mechanism will introduce a new (and better) form of discipline on school managers by holding them accountable to their "customers." The work of managing schools changes in contexts of open enrolments, per capita funding, and site-based management (Menter et al., 1995; Bowe, Ball with Gold, 1993; Blackmore et al., 1996). Principals are increasingly preoccupied with budgets, image, and enrolments, and performance on standardized tests and external inspections. They report that they have far less time for curriculum and teaching matters, while parents are busy raising funds for essential supplies and preoccupied with the minutiae of school management. Blackmore (1995) has shown that in addition to these kinds of duties, women administrators also absorb a great deal of nurturing and supporting labor in relation to staff who must work with diminishing resources, and with families who can no longer obtain services that their children need. This type of emotional labor is very time-consuming and draining. A large number of principals, as well as teachers, in market-driven school environments report stress and dissatisfaction with their jobs (Menter et al., 1995).

Whatever common sense might lead people to believe, the evidence is that educational markets do not lead to innovation or to better schools.

Parents and community members who have been invited, or required, to take part in school governance in competitive environments report similar frustrations. A group of English researchers argue that the promise of "active citizenship" through school governance is experienced by many people as stressful "state volunteerism" (Deem, Brehony, & Heath, 1995). Members of school governing bodies (the English equivalent of school councils) reported that they were over-burdened with budget matters and fund raising. Where schools compete for enrollment, many parents work incredibly hard to enhance their school's image and performance. At the same time, they are meant to monitor the performance of teachers and students, thus setting up an adversarial rather than a collaborative relationship. Finally, these and other researchers found that school governing bodies are actively recruiting small business owners, managers, and professionals — and increasingly more men — who are presumed to possess the skills and knowledge required by more and more corporate forms of school governance — people who, whatever their skills, are often unrepresentative of other parents and students in the community. Other parents, meanwhile, often lack the time, resources, or inclination to participate, especially where their skills and resources do not match those sought by the school.

Conclusion

Whatever common sense might lead people to believe, the evidence is that educational markets do not lead to innovation or to better schools. While some students are fortunate to enter the school of their choice, the educational market is not an equal playing field. For individual families and schools alike, choice is a complex process embedded in an unequal society where people choose differently, do not have the same opportunities to choose, and in the poorest cases, have few real choices at all. Researchers who have examined the effects of choice in practice, conclude that this reform tends to deepen educational inequalities, and to credit or blame families, and especially mothers, with being personally responsible for the "good" or "bad" choices they make.

The market does NOT offer a panacea for problems in education. It is a reform which pretends that education could be restructured to work like a shopping mall, where the cumulative effects of consumers' choices will produce better and more diverse products for everyone. In practice, the picture of market based education is very different. As in any other market, there are few winners and many losers. Unless we want to reduce democracy to individuals' right to consume, a right that only a few can actually exercise, we ought to resist market based schooling and debunk the grand and false pretensions of their promoters.

Note

This article is based on a review of research on the effects of market-driven school choice in the United States (Apple, 1996; Cookson, 1994; Wells, 1993; Fuller & Elmore, 1996), Britain (Ball, 1993; Bowe, Ball, & Gold, 1993; Deem, Brehony, & Heath, 1995), New Zealand (Gordon, 1995) and Australia (Blackmore, 1995; Kenway et al., 1993). I also draw from research on recent education policies introduced in Canada (Elliott & MacLennan, 1994; Levin, 1997; Dehli, 1996). I want to acknowledge the financial support of the Social Sciences and Humanities Research Council, and the research of and discussions with Anne Bradbury, Doreen Fumia, Karyn Sandlos, Leeno Karumanchery and Grace Puja. I am also grateful for comments by Sandra Acker and Andy Hargreaves.

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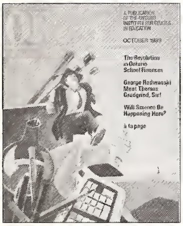

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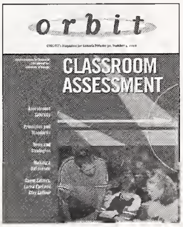

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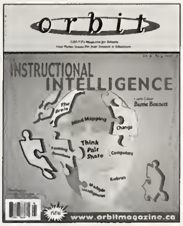

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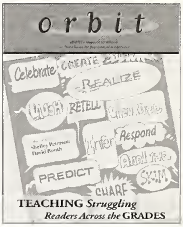
Barrie Bennett



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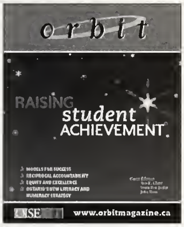

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Avis E. Glaze

A survey of the past fifteen years

ELEMENTARY SCIENCE IN ONTARIO

R. H. Stinson
OISE Western Ontario Centre, London

This review is mainly about the work of the Science Committee of the Ontario Curriculum Institute, of which I was a member and for a period chairman. Although our work gave us a pretty good view of elementary science development in Ontario, it is still a limited view. I am sure that among the many others who participated in the development there will be other views, some perhaps quite different from mine.

In 1963 we began an experiment in Ontario to take a fresh look at the way elementary science was being taught in the schools. This was part of a worldwide movement in curriculum revision in the 1960s, which in different countries brought together scholars and teachers in productive combinations to examine the content of the curriculum and the way in which modern science was being presented in the classroom. For example, a major curriculum development project in the United States, where groups were trying out innovations in secondary school classrooms in physics, chemistry, and biology, eventually resulted in such courses as PSSC physics, CHEM Study, and the different versions of the Biological Sciences Curriculum Study. At the same time both in Great Britain and the United States major attention was being given to the teaching of science in lower levels of the schools.

Ontario Curriculum Institute

In Ontario the movement received its impetus from the work of a joint committee of the Toronto Board of Education and the University of Toronto. During the summer of 1961 this committee divided into three groups—an English Study Committee, a Social Sciences Study Committee, and a Science Study Committee — and from the summer work published a book in 1962 called *Design for Learning,* edited by Northrop Frye.[1] The Science Study Committee examined the courses of study from kindergarten to grade 13 and made a number of constructive criticisms and comments, ending up with a table of suggested topics in both physical and biological sciences that might be taught at appropriate age levels from grades 1 to 10.

From this beginning grew the Ontario Curriculum Institute (OCI), with funding from the Ontario Teachers' Federation and the Department of Education and with substantial support from the Ford Foundation, the school boards, universities, and other educational institutions of Ontario. For the next three years OCI organized and provided support and funds for the ongoing work of committees not only in the original three areas of English, social studies, and science, but in a number of other curriculum areas too.

The OCI Science Committee began its work in the summer of 1963. Its membership included representatives from the primary to the university levels, as well as from the teachers' colleges and an institute of technology. During the first summer we reviewed the material already prepared in *Design for Learning,* attempted to understand each other's point of view, looked at the current situation, and visited innovative projects such as the Elementary Science Study in Cambridge, Massachusetts. The report from this first summer dealt with such matters as objectives in science teaching, the learning ability of children, and the need for an experimental approach in the schools.[2]

The Committee made the decision to work at the elementary level, and by the summer of 1964 had decided to go ahead with the development and testing of science curriculum units. The reorganized Committee was composed of teams, with the school systems of Kingston, London, Toronto, and Kitchener–Waterloo each represented by a teacher, and the universities in those same cities each represented by a scientist—chemist, physicist, or biologist. Other skilled teachers from both elementary and secondary levels in Hamilton and Toronto were active in the work that went on. Four units—'Measurement,' 'Matter,' 'Microscopy,' and 'Comparing Animals'—were developed during the summer of 1964 as the teams worked with volunteer children from the junior level in a Toronto school.

The development work continued over the next few years as the Science Committee moved under the aegis of the Ontario Institute for Studies in Education (when OCI became part of OISE). Douglas Roberts of the Department of Curriculum at OISE described the state of the project in the first issue of *Orbit* in October 1969;[3] continued development from this point eventually produced fourteen science units, some translated into French.

The OCI/OISE units (which later became known as the OTF units) were separate blocks of instruction, varying from a few weeks to several weeks, based upon a mix of concepts (e.g., the various matter and energy units), innovative ways of working (the 'Comparing Animals' unit), and an introduction to an instrument (the 'Microscopy' unit). Along with each of these went materials such as balances, microscopes, weights, and many other specialized items. Some were supplied from commercial sources, while others were manufactured under the direction of Paul Sheehan, a member of the Committee.

The Science Committee had no formal objectives, but set out to explore the suggestions and conclusions reached in *Design for Learning* and its own previous report. There was a strong need to bring science content up to date; hence the collaboration of scientists and other subject specialists with teachers in the development groups. There was an equally strong feeling that, if at all possible, materials should be placed in the hands of children and procedures worked out that would assist teachers in developing an active mode of inquiry in the classroom. There was also a suspicion—and *Design for Learning* had pointed this way—that we were not sufficiently challenging the abilities of children in the elementary school.

Other Development Groups

Other development efforts, larger in scale, were under way in Great Britain and the United States. By the mid 1960s the Nuffield Foundation of Great Britain had heavily funded a number of curriculum projects including one in Junior Science. At the same time in the United States there developed several elementary science programs supported by the National Science Foundation, notably the Elementary Science Study (ESS), the Science Curriculum Improvement Study (SCIS), and the program developed by the American Association for the Advancement of Science.

The Ontario Science Committee developed close connections with both the Elementary Science Study and the Nuffield Junior Science group. ESS invited the participation of interested Canadian scientists, with the result that Fred Gornall and Cliff Anastasiou, from the University of British Columbia, and the author, from the University of Western Ontario, all worked for varying periods at the Education Development Center in Newton, Massachusetts, the home of ESS, as biology consultants. The Nuffield Junior Science Study invited Paul Park, another member of the Science Committee, to spend a year in active work with the British group. In addition to members of the Committee working with such groups, Ontario, particularly in London, became a trial center for some of the ESS units, and Ron Wastnedge, the leader of the Nuffield Junior Science Study, became an active contributor to the development of the Nuffield approach in this province.

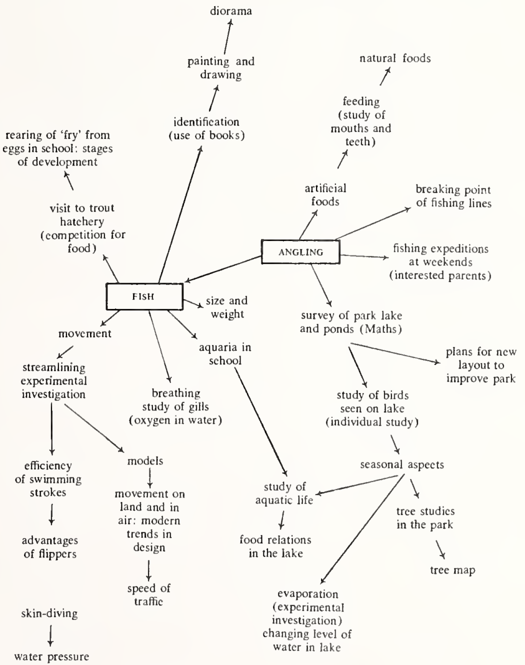
The Elementary Science Study eventually produced between fifty and sixty separate units, with such varied names as *Light and Shadows, The Musical Instrument Recipe Book, Mystery Powders, Microgardening,* and *Kitchen Physics.*[4] These had a highly problem-oriented approach in which children were led into a deeper understanding of scientific concepts or specific phenomena. Many of the units were supported by kits of materials.

The Science Curriculum Improvement Study and the AAAS program, on the other hand, became integrated year-long programs, again backed up heavily with kits of materials. They were, however, based on quite different rationales. The SCIS program had both a physics and a biology side to it, and within each of these a conceptual hierarchy organized across the six years.[5] Concepts such as organisms, populations, ecosystems, energy, and relativity were studied at the child's level.

The AAAS Program, which came to be called *Science—A Process Approach,*[6] was not organized around concepts, phenomena, or problems (like the OTF and ESS units), nor around major conceptual structures (like the SCIS program), but instead was based upon behaviors commonly used in science. These were described as observing, measuring, using space–time relationships, predicting, inferring, formulating hypotheses, interpreting data, controlling variables, and experimenting.

The Nuffield Junior Science had quite a different structure.[7] Here the teacher usually began with a phenomenon or a problem directly out of the children's environment—sometimes a technological phenomenon, frequently a natural one found in the outdoors—and from this through a discussion and subsequent questioning discovered points of interest and problems that the children might like to follow up. The result was usually set out by the teacher in a flow diagram that allowed for an overview of all the activities and could be amended as the children pursued their problems. *(See chart below)*

In its purest form this method led to individual children or pairs or larger groups taking on particular questions in which they had become interested and, with the teacher's encouragement, posing problems to themselves, devising methods of tackling these, and trying to find solutions. They usually were encouraged to illustrate what they had done either in symbols or graphs and drawings. During the development stages of the project, materials such as magnets, lenses, and animal cages were supplied to the classroom teachers by the developers. But eventually it was felt that teachers and children would be able to


diorama
painting and drawing
natural foods
feeding (study of mouths and teeth)
identification (use of books)
rearing of 'fry' from eggs in school: stages of development
artificial foods
breaking point of fishing lines
visit to trout hatchery (competition for food)
ANGLING
fishing expeditions at weekends (interested parents)
FISH
size and weight
survey of park lake and ponds (Maths)
movement
aquaria in school
plans for new layout to improve park
streamlining experimental investigation
breathing study of gills (oxygen in water)
study of birds seen on lake (individual study)
efficiency of swimming strokes
models
seasonal aspects
movement on land and in air: modern trends in design
study of aquatic life
tree studies in the park
advantages of flippers
food relations in the lake
tree map
speed of traffic
evaporation (experimental investigation) changing level of water in lake
skin-diving
water pressure (experimental)

Angling

This flow chart is included to illustrate how a program was based on an interest shown by a group of children.

supply their own things.

The P1J1 in Ontario

While the above development was going on, the Ontario Ministry of Education was revising its science guidelines for the K–6 levels. The previous guideline, which came to be known as 'The Little Grey Book,' had been reviewed in *Design for Learning*. There it had been stated that, with respect to science, emphasis in the course of study was almost entirely on living things, with little attention to physical and chemical phenomena in the environment; many of the activities listed had little or no value scientifically; and a much greater effort should be made to emphasize the treatment of central principles rather than isolated phenomena.

In 1967 was published the new guideline known as 'Curriculum P1J1, Interim Revision Science.' It was a genuine attempt to move in the direction of a more child-centered curriculum, with children carrying on active inquiry in their classrooms. For the first two grades the suggested activities were largely exploratory, using many indoor and outdoor things in the first grade, and having a seasonal approach (much like 'The Little Grey Book') in the second grade. Much was left to the teacher, who was encouraged to bring children into contact with materials, stimulate questions, and encourage them to talk about and record their experiences.

For the third to the sixth grades a unit organization was suggested. In each year a number of topics were listed as possible starting points for the teacher. The topics were a mixture, some emphasizing the study of concepts such as weight, matter, and variation; others dealing with instruments such as the microscope and the balance; and still others with phenomena such as the moon and the burning of a candle. Again in these grades there was considerable emphasis on leaving the working out of topic ideas and the obtaining of materials to the teacher. The teacher, however, was provided with a considerable reference list that included units and programs from the various main curriculum development projects noted above.

What Happened in Ontario: The OTF Workshops

All of the above, then, is background to the subsequent discussion of what happened in Ontario. From the beginning, the OISE–OTF science units got off to a strong start, largely due to the tremendous efforts of two people. From the beginning of the Science Committee, one of its members was Paul Sheehan, a teacher of physics at St. Michael's College School in Toronto. He was in charge of constructing, supplying, and continually revising many of the bits and pieces used in the units. His ingenuity and inventive skill, coupled with his energy as he scoured supply houses for the most suitable materials, provided the essential equipment backup the program needed. He carried on this work first with the Industrial Arts Department of his school, and later transferred much of it to a scientific supply firm while he continued to develop particular items.

Don Cooper from Kingston was the workshop leader, a role that came into being because the Committee decided after its development phase that it would take an active part in disseminating the units. Actually it was pressed to do so because in the late 1960s more and more school boards in the province were making inquiries about the program and asking for participation. Summer workshops evolved, then winter workshops, usually four days to a week in length. From the program started by Don evolved a newsletter, which in February 1968 reported that in the previous few months workshops had been conducted in eleven centers in all parts of Ontario. At that time some 30000 elementary school children in 172 centers from Kenora to Kingston were working with some or all of the OISE–OTF materials. It was estimated that in 1969 about 9000 students who had experienced the materials in the elementary school would be entering the secondary school.

All of which brought a need for a greater basis of support. This was supplied by the Ontario Teachers' Federation, which took over the sponsorship of the development and workshop program and contributed generously to it each year to the point of funding an office as well as the traveling workshop program. The Federation also took over the publication and distribution of the unit booklets as the number of these continued to expand. By 1973 refresher workshops were being held for teachers who had been to earlier sessions; also, beginning in this year, fifteen workshops took place attended by 234 elementary principals, who came to learn about the use of the units in their schools.

In the meantime the units of the Elementary Science Study were beginning to appear more and more in school systems, for again the unit format (as with the OTF program) probably fitted more easily into science programs in which teachers were moving from textbook-based curricula into experimenting with new ideas and attempting to handle quite different materials. As noted above too, the P1J1 had encouraged the use of a unit format.

The Early School Environment Study

Another major development occurred in Ontario in 1970 when Paul Park of Althouse College of Education, University of Western Ontario, received a substantial grant from the Ford Foundation to explore whether the methods of the Nuffield Junior Science experiment could be transferred to North American school systems. Using trial schools in three different boards in southwestern Ontario, the project spent three years in seeing whether the approach was viable in schools, what it needed in support from principals and other teachers, and how the attitudes required for the very open-ended teaching it demanded could be transferred to teachers.

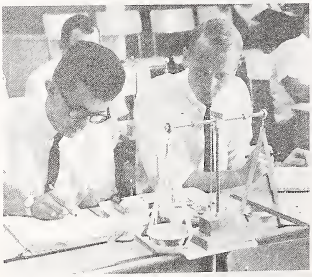
Much time was spent in giving workshops to teachers, where they were encouraged to take small problems from the environment: sometimes these were of a very immediate nature (such as why do some nylons run more than others—setting up an experiment to find out); sometimes they had to do with a social issue (such as what kind of society lived in this neighborhood 100 years ago—using data possibly from the local cemetery). Materials were not developed for teachers or classrooms; on the contrary teachers and children were encouraged to examine the materials around themselves and work at problems coming out of these.

The ideas of Park spread far and wide, beyond the bounds of the province, for workshops were given in various parts of Canada and the United States. Films and other audiovisual aids were made to illustrate the way in which the program could be used.

So by the early 1970s in Ontario three new sources of elementary science materials and approaches were available and were being tried out by teachers: the OTF science units, the ESS materials, and the method of the Early School Environment Study. The SCIS and AAAS programs were not yet receiving much attention.

Building Science Curricula

As new units became available more workshops were held, particularly within school boards themselves. But it soon became evident that schools and school systems wanted more than isolated units and were eager to attempt the building of integrated curricula. The units and particularly the equipment supplied for the OTF units had gone largely into the upper levels of the elementary school, especially grades 7 and 8, where there were frequently science rooms in the schools and teachers who had a particular interest in the subject. Where the schools were on rotary, it meant



Teachers are introduced to OCI materials at a 1965 science workshop.

that equipment could be kept in one room and the junior and intermediate classes could use it there. Where it had to be moved about, the Science Committee had devised a traveling cart on which the equipment could stand and be rolled from one room to another.

Teachers who were knowledgeable about the new science ideas and materials, from experience in the workshops and with the units in their schools, were used as resource people in their own workshops. Consequently such teachers began to become more and more interested and involved in curriculum-building.

The OTF Science Committee had been asked if its intention was to develop a curriculum by building sufficient units that could be used in an integrated and sequential fashion across several of the grades. The Committee had never intended to do this. It had, as Douglas Roberts pointed out in his 1969 *Orbit* article, originally adopted a 'stimulants and samples approach,' taking its mandate to be an experimental one to see if children could actively use a new mode in science learning in the classroom. It developed no more than about fourteen units, some of these related to safety and the use of objectives. However, the fifty or more ESS units were now becoming more available so that it was possible for school systems to draw upon a larger battery of material resources for building their own curriculum.

But the problem still remained how to organize the various physics and biology ideas into a coherent whole and match these to children's interests and stage of development. Scientific concepts have, in the minds of scientists, been organized into beautifully complex and integrated hierarchies; but when these are taught at lower levels, the interconnections between them become lost and the world can appear to be a miscellaneous collection of different and unconnected concepts and phenomena—magnets, trees, energy, reproduction, electricity, and so on. Paul Brandwein tackled the problem by suggesting that one could put together science ideas or concepts into a conceptual scheme, a kind of society of ideas.[8] In his writing he suggested six of these as ideas basic to an elementary science curriculum. Not only were they ways of organizing the many ideas of the physical and biological world, but they were also starting points from which one could think about the world. These six he noted were:

1. Under ordinary conditions, matter can be changed but not annihilated or created.
2. Under ordinary conditions, energy can be changed or exchanged, but not annihilated.
3. There is an interchange of materials and energy between living things and their environment.
4. The organism is a product of its heredity and environment.
5. The universe and its component bodies are constantly changing.
6. Living things have changed over the years.

Brandwein talked about his conceptual scheme at meetings of science teachers in Ontario and published a science program based upon these basic ideas.

The list of conceptual schemes he suggested stimulated more than one school system in Ontario to use it as an organizing device for gathering together the different scientific concepts and building a curriculum for at least the first six years. One can find, for example, in some of the larger boards a scope and sequence chart in which the conceptual schemes are listed as energy, matter, interrelationships, heredity and environment, change in living things, and change in nonliving things. These are the six organizing streams that flow through all of at least the first six years of the elementary school. In each year activities are carried out that illustrate some aspect of each conceptual scheme. Frequently OTF and ESS units are used where appropriate in the program.

However, building a science curriculum on the basis of conceptual schemes was a rare approach in Ontario. More commonly boards made available a collection of the units, wrote a number of units of their own, and through consultation and workshops assisted teachers in trying these out with children. At the same time the OTF workshop under Don Cooper became more varied, including not only the OTF units but ESS materials as well as units developed with the Milk Foundation of Ontario, and the Early School Environment Study approach. From this has grown in some school systems a simpler type of curriculum organization in which there are core units in each of three areas, called physical, life, and earth science. The schools are asked to teach the core units during the year—perhaps a minimum of three—but then have the option of selecting others from any of the three areas.

Problems along the Way: In the Classroom

Throughout the whole of science development in the 1960s there was a major problem that I believe was seriously underestimated at the elementary level by most of the developers. That was the difficulty of transferring the science content knowledge, as well as the enthusiasm for the particular programs or approaches, to the teachers. Those who were part of the original developments grew with the ideas and methods and came to have considerable knowledge and enthusiasm for the new approach in the classroom. However, those who did not have the opportunity to go through the development stages but had to in a sense start cold with the units, even after the workshops, had more difficulty. In introducing open-ended problems to children, and in allowing them to pursue investigation with materials in their own hands, all kinds of questions come up, for many of which the teacher is unprepared. How many times can one say 'I don't know' and remain credible to oneself let alone to the pupils? This problem was particularly acute in the Nuffield Junior Science Study and its translation in Ontario as the Early School Environment Study, for here there was a much greater individualization of problems; they would rise from a common phenomenon but usually branch out into lines of inquiry according to students' interests and teachers' suggestions.

The teaching of new ideas and the handling of new materials was done best, I think, where the teacher was able to work within a fairly structured sequence. The Science Committee in Ontario never went as far as suggesting lesson plans, but it did suggest sequences by which the ideas of the units could be worked out, and these apparently were fairly easily translatable into day-by-day operations. One of the most effective large innovative teaching programs in my own experience was not in science but in social studies, in *Man: A Course of Study* by Jerome Bruner and his colleagues. In this year-long program teachers are asked to look at man, animals, and social studies phenomena in a quite different way with a good deal of discussion and inquiry. The program has been laid out in lesson plans, and the experience of transferring new ideas and teaching styles in this way has been highly satisfactory, according to the teachers.

The distribution, handling, and storage of materials in classrooms posed problems that teachers tackled in different ways but that at times became overwhelming. When thirty children, even working in pairs, all have pots of water and powder and eyedroppers and other containers, one has to have high organizational abilities, nerves of steel, and a good relationship with the principal in order to have a good day. Again, things can be much better organized and controlled in the rooms set aside for science. It is in the multipurpose rooms of the lower grades where children do all their learning that the greatest difficulties arise. The ESS, SCIS, and AAAS programs put their materials into well-organized kits, usually made up of cardboard boxes, partitions, and trays, but even these require care. They also require replenishment, for a number of bits and pieces are used up in the science lessons. In the more open-ended model of the Nuffield Junior Science, classrooms tend to become filled with heterogeneous collections of materials. Boxes, drawers, and shelves are needed as never before.

Rising costs provided another detriment to the spread of teaching with materials. In the OTF program Paul Sheehan strove to keep down costs to the point of inventing a hardy classroom balance from simple parts that included a knitting needle and a razor blade. Small plastic microscopes usable by small children were commercially developed for classrooms, able to take rough handling and still have good optics. But through the early 1970s costs have doubled and tripled to the point where it has now become much more difficult for a classroom to become equipped with full sets of materials.

Changes in School Systems

While school systems were beginning to build curricula from new experimental science units, other movements were at work in Ontario that had a profound effect upon this process. In 1969 there took place a large-scale reorganization of the provincial school systems whereby some 1700 local school boards were consolidated into about 150 city and county boards. This meant that teachers from the science workshops who had found themselves under one supervisor for science now found themselves under another. Curriculum-building slowed as the new county units underwent the settling-down process following reorganization.

A second factor that had a major effect upon the dissemination of the science units through the workshop movement was the rapid expansion of the school system. The Science Committee had originally insisted that teachers could be trained in the workshops only if the boards agreed to purchase the equipment necessary to go along with the units; conversely the Committee did not sell equipment to boards unless there were teachers who had had the workshop training. The Committee was told that this was a good idea, for it ensured that knowledgeable teachers would be using the equipment. However, as the number of schools grew, the mobility of teachers was such that teachers and materials became disconnected rather rapidly. At one point in some of the larger Toronto systems the average length of stay of a teacher in an elementary school was less than two years. The teachers tended to move, but the materials tended to stay behind, with the result that principals found themselves with materials and units on hand and teachers who knew little about them. Whenever schools wanted to have teachers come to workshops so as to learn to use equipment they already possessed, this service was made available, but there was no doubt that more and more equipment was sitting unused in the schools.

Educational Trends

Still other 'movements' or shifts in school curricular thinking have impinged upon science development. There was a healthy questioning of what it was the inquiry and discovery approaches were actually trying to do. What objectives did they have? A desire for the use of behavioral objectives grew in a number of school systems and reached the point where some attention was given to it in the OTF science units. Among the developed programs the AAAS program paid most attention to the matter of trying to show more accurately, by defining objectives operationally, what it was children were learning. However, there were strong and different feelings in school systems about the use of behavioral objectives. The odd school system attempted to use them in the most detailed form, requiring teachers in a sense to be accountable for many small teaching acts, while others felt that an attempt to do this trivialized the whole learning operation.

A different role for the science teacher – guide rather than instructor.

Another impact on science curriculum development has been the growing emphasis on environmental studies. Through the 1970s man has become much more aware of the interplay between human society and the physical and natural environment, and this awareness has become increasingly reflected in the guidelines of the Ministry of Education such as the intermediate guidelines 'Science,' 'Environmental Science,' and 'Man and the Earth,' which influence the upper elementary years, and the new P1J1, *The Formative Years,* which sets out aims and objectives for the primary and junior years. In the latter the traditional subject areas of science and geography are linked together in an attempt to have children begin to understand the relationships and interactions between their physical, biological, and social environments. So strong has this emphasis on environmental studies become, including the development of the large outdoor resource centers in a number of school systems, that I occasionally feel that a great environmental wave has swept science out of the schools.

But the issue is not a simple one, and in the long run I expect nothing but a positive effect upon science teaching. Environmental studies bring a relevance into science that is frequently absent. They also bring children closely in touch with their out-of-school environment and provide greater continuity between in-school and out-of-school issues. But on the other hand they are complex; one often starts with phenomena that require a good deal of previous science knowledge (as with pollution, for example). Also they have led to a blurring of lines between fields such as science and geography, lines that are still useful in terms of organizing knowledge. The emphasis upon environmental studies has had the result that this year five major school scientific and environmental societies in Ontario have combined to put on a single fall conference, the 'Man–Environment Impact Conference.'

Still another impact on science teaching is coming from the increasing knowledge we have about how children (and adults) think. From the work of Floyd Robinson and colleagues, for example, I think it is evident that the skills we have frequently emphasized as belonging to science, such as classifying, inferring, making hypotheses, and predicting, are in reality commonly used across a number of fields as soon as we begin to introduce problems.[9] There are particular emphases in science, such as the handling and controlling of variables, that are perhaps more easily done in solving physics and biology problems, but on the whole the mental activities we associate with the scientific method are not restricted in the schools to physical and biological science.

And from the work of Piaget and the developmental psychologists we are gradually coming to be able to make a more knowledgeable match between the developing abilities of children and the environment with which we surround them in schools. The Science Curriculum Improvement Study has a series of films called *Classification, Conservation,* and *Formal Thought,* which I have found useful in looking at some of the difficulties children have in comprehending science concepts when they are at certain stages of mental development.

What Have We Learned?

First of all I believe we learned that it was possible to take some of the suggestions of *Design for Learning* and the OCI Science Committee and do something about them. Classroom units were developed with children that give attention to principles rather than isolated phenomena, and they deal with the physical as well as with the biological world—two strong points that were made with respect to updating science teaching in the schools. Second, it has been possible to give children firsthand experience with science materials in the lower grades, and place these activities in an instructional setting that allows the teacher not only to introduce important principles but to maintain a degree of open-ended inquiry in the classroom at the same time. And third, by trying out the ideas and the materials with children at different age levels, it has been possible to make a better match between children's abilities and what they are asked to learn.

Although the Committee set out with the original intention of seeing only whether it was possible to meet the above objectives in classrooms, the result of its work (and that of the science development movement of the 1960s) was to produce a number of alternatives in the way of science units and programs, other than the traditional textbook series, and to make them available to the schools and school systems as resources in building their own curricula.

However, the Committee decided to go a step further, beyond the demonstration of what was possible to the dissemination of units across the province with the help of the Ontario Teachers' Federation. Productive though this turned out to be with respect to the demonstration of such alternatives provincewide, it led to problems associated with curriculum development and implementation that are still with us.

For example, we know now that to expect teachers of science to gain new knowledge as well as change a teaching style we should go slowly and offer maximum support. The notion that most teachers can do it on their own is dead wrong. A few can, but most cannot be handed a guideline and asked to teach their classes from it. We should offer not only support in time and materials, but particularly organizational support from colleagues, principals, superintendents, and often the society around. Furthermore, the support should be in the form of long-term development rather than short-term workshops. The use of professional development days for short-term support has frequently led to frustration rather than development.

We know that the amount of support varies with the degree of change we are asking teachers to undergo. Mastering new ideas and materials and linking these with children is more easily done in a structured setting, even to the point of lesson plans, than in a very unstructured setting where the teacher does not know what is coming next. The Nuffield Junior Science Study and (its Ontario counterpart) the Early School Environment Study probably require the maximum of support for most teachers. Consequently, although I feel this approach is ideal in letting children tackle problems and find solutions, it has not been easy for teachers to work in this way in Ontario classrooms.

A second major learning for the science developers has had to do with the problems associated with the attempt to give children firsthand experience in classrooms through the use of materials. Obtaining things cheaply and storing, maintaining, and replacing take time and resources. Again the teacher cannot do it well alone, and where left to do it alone the experience for children has been a hit-and-miss affair. Bringing children and materials together is being done most consistently in boards where there is some systematic handling of the materials. Either classrooms are supplied with kits that are stored and maintained in a school resource center, with perhaps an annual check-up by the system itself, or there is a central agency that delivers materials to the schools for the teaching period and then returns them to a central depot for checking and replacement. The latter method increases costs in terms of warehouse and central personnel, but it does seem to put things into children's hands. One saves on costs, of course, by being able to share non-expendable materials among schools. But bringing each individual child into firsthand contact with phenomena in a classroom is still a big problem, and in small boards with fewer resources it is natural to fall back on the textbook and a demonstration. It is true that the outdoor education centers also bring children into firsthand contact, but at most these are visited by each child only a few times in the course of a year.

Although the Science Committee did not set out to change the curriculum of the elementary schools, it naturally hoped that its findings and developments, and those of the science curriculum development movement in general, would find their way into use. And this happened. But the Committee had no idea of the complexity of both building and implementing the curriculum—building in the sense of choosing and integrating units into a coherent plan with some attention to objectives and to evaluation, and implementing in the sense of having a curriculum adopted and working in the schools of a jurisdiction. Looking back over the last fifteen years I believe that where this has been accomplished it has been due to the presence of a science resource staff: an administrator, coordinator, consultant, or special resource teacher who had the planning ability and the time and energy to devote to the necessary organizing. Some school systems had a philosophy of centralized curriculum development, where programs were developed by resource staff and writing teams and given to schools to adopt. In other systems curriculum development was school-based, with a principal and staff planning together or teachers planning individually, without help from science resource staff in professional development and material supply. In either situation, however, it has been difficult both to build and to implement curriculum. The science program consultants of the Ministry of Education played a vital role in a number of school systems, but like many in consultant positions they found it difficult to spread themselves effectively over a number of separate organizational units, whether schools or school systems.

And a final learning coming out of the fifteen-year period, upon which the Science Committee would likely reflect if it came back into being, is that the priorities of society and its schools shift under one's feet. For example, it is difficult to know just where elementary science stands now in priority with the heavy demand for return to basic skills in English and mathematics. However, if it is still an important subject for the elementary years, the OCI Science Committee would still stand by the central idea in its work—the linking of individual children with firsthand experience of the physical and biological world. The concluding statements of the 1964 report of the Committee would still hold: 'Inquiry, however, is an individual affair and if a child is going to practice it in science, pencil, paper and crayons are not enough. The learner must have material to see and feel and measure, and simple equipment necessary to carry this out. There is no other way to do it!'

Notes:

1. *Design for Learning*, ed. by Northrop Frye (Toronto: University of Toronto Press, 1962).

2. *Science*, an interim report of the Science Committee, Ontario Curriculum Institute, December 1963.

3. Douglas Roberts, 'Samples—Total Packages—and Teacher Education.' *Orbit*, preliminary issue no. 1 (October 1969).

4. The ESS units are available from McGraw-Hill Ryerson, 330 Progress Avenue, Scarborough, Ontario M1P 2Z5

5. The SCIS program is available from Gage Publishing, 164 Commander Blvd. Agincourt, Ontario M1S 3C7.

6. Inquiries about *Science—A Process Approach* should be directed to Ginn and Co., 3771 Victoria Park Avenue, Scarborough, Ontario M1W 2P9.

7. The *Nuffield Junior Science* books are available from Wm. Collins Sons & Co. Canada Ltd., 100 Lesmill Road, Don Mills, Ontario M3B 2T5.

8. Paul F. Brandwein, 'Elements in a Strategy for Teaching Science in the Elementary School,' in *The Teaching of Science* (Cambridge, Mass.: Harvard University Press, 1962).

9. Floyd G. Robinson, John Tickle, and David W. Brison, *Inquiry Training: Fusing Theory and Practice* (Profiles in Practical Education no. 4. Toronto: OISE, 1972).

Beginning French Immersion at Grade 8

Merrill Swain and Sharon Lapkin, OISE

The Context

The teaching of French to English-speaking students in Ontario involves one of three main approaches, which can be labelled *core* French, *extended* French and *immersion.*[2] These approaches may be described in terms of the amount of time devoted to French instruction and the approach to French (that is, whether as a subject or a medium of instruction). The core program, restricted to about 20 to 40 minutes a day, tends to consist of formal language teaching, while the extended and immersion approaches involve the functional use of French in the classroom. The broad aims of the three programs also differ: the objectives of the core program are limited to the acquisition of a 'basic level' knowledge of French, while the extended and immersion programs will lead to 'middle' and 'top' levels (Ontario Ministry of Education, 1974, 22-23).[3] This statement of objectives suggests that immersion education should lead to the ability to take further education in French, accept employment in French, and participate easily in conversations with French-speaking people, whose values and culture the students have learned to understand and appreciate.

Each of the three labels — core, extended, and immersion — covers a variety of alternatives. Within the immersion approach we find programs beginning at kindergarten, grade 1, grade 3, grade 4, grade 6, grade 7, and grade 8. The amount of time devoted to instruction in the second language varies from 50 to 100 percent of the school day. (For discussion of the various alternatives, see Edwards and Smyth, 1976.[4]) In this paper we will look at an immersion program beginning at the grade 8 level, in operation in several schools of the Peel County Board of Education. We will describe briefly the results of annual evaluations of this program, comparing, where possible, the results with those obtained by students in other French programs.

The Peel County Program

The first students to enrol in the Peel County program, which was established in 1971, have just completed grade 13 — their sixth year of a program that began in grade 8. Prior to entering the immersion program, the students had taken one year of core French instruction — 20-minute periods daily, intensified to 60-minute periods during the last two months of their grade 7 year.

At the grade 8 level, the first year of immersion, approximately 70 percent of the curriculum is taught in French and 30 percent in English. The subjects taught in French are French language arts, mathematics, history, geography, science, and art; the remaining subjects — English language arts, physical education, home economics or industrial arts, and music — are taught in English. In grades 9 and 10, approximately 40 percent of the curriculum is taught in French and 60 percent in English. French is used as the medium of instruction for history, geography, and French language arts, and English is used for mathematics, science, English, and other course options.

Although there have been modifications in the structure of the program recently, the first group of immersion students to reach grade 11 took two French courses: a grade 12 level French language course and a specially designed course on contemporary Quebec literature. In grade 12 they took one grade 13 course, and in grade 13, the remaining grade 13 French course. (One of the grade 13 French courses involves the study of French-Canadian literature; the other is a language practice course.) At grade 12 and 13, then, immersion students take their French together with students who have taken core French as an option throughout their high school career. These core French students tend to be highly motivated, successful second-language learners, since the poorly motivated, less successful French students have opted out at an earlier stage.

Teacher and Student Characteristics

To date, most teachers associated with the French component of the program have been native speakers of French whose background includes having taught French as a second language to English-speaking students or having taught subject material to native French-speaking students. The teachers find the lack of text materials appropriate to both the linguistic and cognitive levels of the students to be the major handicap in teaching. Grade 8 materials from Quebec or other French-speaking communities in Canada may be conceptually appropriate for 13-year-old students, but are linguistically too sophisticated. This has meant that in grade 8 much of the material used is prepared by the teachers themselves. At the later grade levels the teachers have made use of textbooks for francophones, but still find that much adaptation is needed as well as preparation of additional supplementary material. With the establishment of similar programs in other boards of education, however, more suitable teacher-created and adapted materials should become available.

The students in the program come from middle- to upper-middle-class homes in Brampton, a basically unilingual English-speaking community near Toronto. For the first several years of the program, students were selected on the basis of above-average IQ and generally high academic ability, as well as their expressed interest in and their parents' approval of the program. Subsequently the program was opened up to admit all students who chose to enter.

Research Questions and Design

The Bilingual Education Project at OISE has been conducting annual evaluations of the immersion program since its inception The design of the evaluation involves comparing students in the immersion program with students in the regular English-taught program who are matched as closely as possible with the immersion group in terms of age, sex, and IQ. Students in the comparison group receive core French instruction — that is, daily periods of instruction in French as a second language.

The evaluation has focussed on two important questions: (1) Do the immersion students attain a higher level of proficiency in French than students in a regular program receiving only core French instruction? (2) How does the academic achievement of immersion students learning subjects such as mathematics, history, and geography taught in French compare with that of regular-program students taught those subjects in English?

Research on these questions has involved testing three successive groups of students at each grade level, so that by June 1977 we had looked at three cohorts of students:

— Cohort I (beginning 1971), tested at grades 8 through 13.

— Cohort II (beginning 1972), tested at grades 8 through 12.

— Cohort III (beginning 1973), tested at grades 8 through 11.

It is the lead group of students (Cohort I) that we focus on in this paper. The findings for this group have, in general, been replicated with subsequent cohorts, so that they can be reported with considerable confidence. Moreover, in 1976, when the lead group of students was in grade 12, we conducted interviews with them to determine their opinions of the program and the extent to which they use French in out-of-school contexts. The interviews provided information on the quality of the immersion experience to complement the quantitative results of the annual evaluations.[5]

Research Findings

In this section, (F) indicates a subject taught in French in the particular grade for the immersion group.

The measures used at the end of grade 8 to test Cohort I immersion students and core French students included standardized tests of science and English literature developed by the International Association for the Evaluation of Educational Achievement (IEA) in the context of the International Educational Achievement Study, as well as a local high school diagnostic test in mathematics. The results showed that at the end of grade 8, immersion students did not achieve as well in science (F) or English reading comprehension as the comparison group, but performed equally well in mathematics (F).

The lags in science and English reading comprehension seemed to have disappeared by the end of grade 9. Local school examinations revealed no significant differences between the two groups in English, science, and mathematics. Standardized achievement tests[6] showed no differences between the groups in the areas of English reading and vocabulary; but a statistically significant difference in favor of the immersion students was noted in the area of study skills (which involves the ability to understand and use symbols and legends, perceive relationships, and extend interpretations beyond given data).

At the grade 10 level, on the local school examinations in science, mathematics, and English, immersion students did as well as their peers in the core French program. In history (F) and geography (F) — the two subjects taught in French to the immersion group — no statistical comparisons were made since the examinations were different for the two groups. In the opinion of their teachers and the school principal, however, both groups were performing comparably and adequately in these subject areas.

As noted above, the teaching of subject material in French terminates at the end of grade 10; therefore no comparisons of academic achievement beyond grade 10 in subject areas other than French have been made.

From the beginning of the evaluation, tests of French listening and reading comprehension developed by the IEA have been employed to measure the second-language skills of the immersion groups relative to those of the core French group. Additional French achievement measures have also been used to gain as much information as possible on the second-language skills of the students, as indicated in the discussion that follows.

At the grade 8 level, Cohort I students were also given a test of speaking ability in French. In all French skills measured — reading comprehension, listening comprehension, and speaking — the immersion students obtained significantly higher scores than students in the 20-minute core French program.

At grade 9, statistically significant differences in favor of the immersion group were found in reading comprehension, listening comprehension, and vocabulary knowledge (as measured by a Test of Useful French Vocabulary developed by the Bilingual Education Project). One further comparison was made. A group of core French students drawn from grades 11, 12, and 13, and designated by their French teachers as average or above average, were tested for reading and listening ability in French. The average score of this select group was comparable to that of the grade 9 immersion group — a finding that suggests that the immersion students were performing as well as average or above-average students at least two grade levels ahead of them.

At the end of grade 10, immersion students continued to out-perform their counterparts taking core French. Significant differences in favor of the immersion group are noted for French reading, listening, speaking, and writing. The performance of grade 10 immersion students was also measured against that of core French students in grades 12 and 13, selected by their French teachers as being their *best* students. These groups were administered tests of French reading and listening comprehension designed for students in their pre-university year. Once again, the immersion students performed as well as core French students two to three grades ahead of them.

The differences in French reading and listening performance between the immersion and comparison students were maintained at the grade 11 level, with significantly higher scores noted for the immersion group.

At grade 12, the immersion and comparison groups were each given pre-university level tests of French reading and listening comprehension. These measures were also administered to a second comparison group composed of fifteen students in the regular grade 13 core French program. Both comparisons showed equivalent performance among the groups in reading comprehension. The listening score obtained by the immersion group, however, remained significantly higher.

In considering these findings it is important to remember that in grade 12 the immersion group is integrated with groups of students in the regular program taking grade 13 core French, who (as has already been pointed out) are highly motivated, successful second-language learners. From grade 12 on, there is no longer an increased opportunity for the immersion students to work in French — that is, to use the second language functionally in studying other subjects through the medium of French.

The Interview Data

In the spring of 1976, eighteen grade 12 French immersion students were interviewed in French. Their attitudes and opinions on subjects such as the value of the immersion program were compared to those expressed by eight students in the grade 13 core French program.

The interviews, conducted in French on a one-to-one basis, were recorded so that the conversational ability of the students could be assessed linguistically at a later date. Nevertheless, the atmosphere was relaxed and informal; and the students were told at the beginning that if they had difficulty in expressing themselves, they could switch to English.

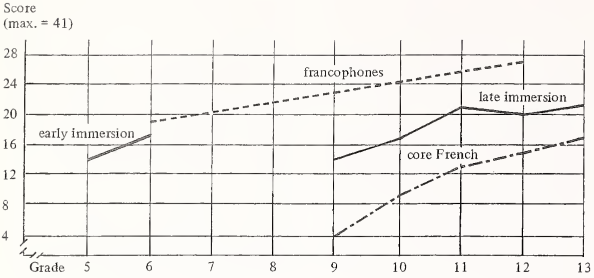
The data gathered are discussed below in terms of the relative ability of the two groups to cope with the communicative demands of the second language, their extracurricular use of French, and their views of the immersion program. It is interesting to note that of the eighteen immersion students interviewed, only two had a bilingual (English/French) parent. Of the eight core French students, in two cases both parents could speak French, and in two cases one parent was a bilingual French Canadian. Some French was also spoken by members of the remaining four students' families. So, on an overall basis, the opportunities for second-language reinforcement in the home were much greater for the core French students.

This may also indicate that 'survival' in the core French option is highly correlated with the opportunity for second-language use outside of school. Immersion students have this opportunity in school, whereas core students do not.

As far as relative ability to communicate in French is concerned, we looked at the extent to which French was used during the interviews. On several occasions, the immersion students found themselves limited in their ability to express themselves in French while attempting to offer explanations of their ideas and opinions. They were reluctant, however, to switch to English, and in most cases eventually succeeded in getting their point across. Despite their linguistic limitations, which stem in part from the fact that the use of French tends to be confined to the classroom, immersion students were eager to use French in this out-of-classroom context. In the sample of core French students, there was a more pronounced tendency to resort to English when they were having difficulty expressing themselves.

Two aspects of extracurricular activity in French — reading for pleasure and trips to the province of Quebec — elicited interesting comments from the students. Although they were asked about the extent to which they tuned in to French radio and

Figure 1/French Cloze Test Scores Obtained by All Groups Tested in 1977*



*Scores rounded to the nearest point.

television, neither group reported making much use of these resources.

Some students in both groups claimed to enjoy reading in French. In both cases their enthusiasm can be related to the content of their courses in French-Canadian literature.

All the immersion students and five of the eight grade 13 core French students had been to Quebec. From their responses to questions about their experiences, it appears that the immersion group felt more comfortable speaking French.

When asked their opinion of the immersion program, immersion students responded favorably. Their comments were remarkably similar to comments that one hears again and again from parents of young children enrolled in early French immersion programs. The program is viewed as a challenge, and the students claim that they have learned how to study effectively because of the additional demands imposed. Students in the immersion program expressed disappointment that their immersion experience had effectively terminated at the end of grade 10. They felt that they had acquired a superior knowledge of French, but were conscious of the need to use the language in order to maintain it.[7]

Core French students also had positive attitudes toward the immersion program, most expressing regret that they had 'missed out' on this opportunity.

Comparing the Late Immersion Alternative

One long-term goal of second-language research involves determining the optimal age for beginning second-language instruction and the optimal amount of time to devote to such instruction. These two factors can be combined in an infinite number of variations: until many more studies of a variety of second-language programs have been undertaken, the answer or answers will remain elusive.

In order to be able to make some comparison between the early and late immersion alternatives, a cloze (i.e., 'fill in the blanks') test of French proficiency was administered in 1977 to groups of students in grades 5 and 6 of an early French immersion program; to groups of students in grades 9 through 13 of the late immersion program in Peel County; to groups of students in grades 9 through 13 in the core French program in Peel County; and to two groups of francophone students at the grade 6 and 12 levels respectively in schools located in a unilingual French-speaking community in the province of Quebec. The performance of the first three groups — the second-language learners — can best be interpreted in the light of scores obtained by native speakers of that language. It is important to compare immersion students at given grade levels with francophone students at the same grade levels in order to avoid misinterpretations that may arise from comparisons across grade levels.

Cloze tests are considered to provide an integrative measure of language ability; filling in the blanks requires one to rely on all the knowledge one has about the language to make 'educated guesses' about what word should be supplied (Oller, 1973; Swain, Lapkin, and Barik, 1976).[8]

The French cloze test given to these groups consists of a passage of 425 words in length adapted slightly from a French magazine article on Canada. Several sentences were left intact at the beginning and end of the passage, as is typically done when a passage of connected prose is closed. In the body of the article, every seventh word was deleted, so as to give a total of 41 blanks. The blanks were of uniform length, and it was specified in the instructions to the students that they were to use only one word to fill each blank.

Figure 1 shows the scores obtained by all the groups tested. The similarity of scores obtained by the grades 5 and 6 early immersion groups on the one hand and the grades 9 and 10 late immersion groups on the other is striking. It might be expected that the older students would not score as high as the younger ones, given the smaller number of hours of French instruction the older ones had accumulated. However, their scores are consistent with a finding reported by Burstall et al. (1974)[9] to the effect that older learners are more efficient learners. In this British study, the French achievement of 16-year-old students was assessed in terms of whether they had begun the study of French as a foreign language at age 8 or age 11. It was found that the groups who had begun earlier excelled only in the area of listening comprehension, but were equivalent to those who had begun at age 11 in all other aspects of French achievement tested.[10]

As noted above, however, it is important to consider the level of achievement demonstrated by the immersion groups relative to that of native French-speaking students at the same age and grade levels. Thus, the fact that the performance of grade 6 early immersion pupils is within two points of that of their unilingual French peers in Quebec, whereas the difference between the performance of the grade 12 immersion students and that of their francophone counterparts is seven points, is of major significance. *This considerably larger difference at the grade 12 level indicates that the grade 12 immersion group is farther from native-like competence than is the grade 6 immersion group.*

With regard to the ability of late immersion students relative to their peers in the core French program, by grade 13 it appears that the gap that existed in grades 9, 10, and 11 is being closed. As we noted above in discussing the IEA French results, the immersion students ceased to make major gains once their intensive exposure to the second language had ended.

Conclusions

In general terms, students enrolled in the French immersion program in Peel County have attained a higher level of French proficiency than comparable groups of students taking a core French option, and they have not suffered in terms of their overall academic development. Pronounced differences in achievement in the second language in favor of the immersion group noted for the first four years of the program taper off in the later grade levels, where only 40 minutes a day is devoted to French and where core and immersion students are combined for their French instruction. The only area tested in which immersion students maintain the advantage gained in the first several years of the program is that of listening comprehension. Additionally, the interview data indicate that the immersion students are better able to cope with the communicative demands of French than the core French students.

All of the evidence taken together suggests that if the full potential of the late immersion program is to be realized, it is advisable to offer opportunities for the functional use of the second language throughout the secondary school years. This could be done by continuing to offer at least one academic subject taught in French in grades 11, 12, and 13, as well as enriched French language courses.

Notes:

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4. Edwards, H.P., and Smyth, F. 'Alternatives to Early Immersion Programs for the Acquisition of French as a Second Language.' *Canadian Modern Language Review* 32, no. 5 (1976), 524-533.
5. Complete details of the tests and other measures employed as well as statistical tables of results (up to grade 10) are available in H.C. Barik and M. Swain, 'A Canadian Experiment in Bilingual Education at the Grade Eight and Nine Levels: The Peel Study,' *Foreign Language Annals* 9 (1976), 465-479, and in H.C. Barik, M. Swain, and V. Gaudino, 'A Canadian Experiment in Bilingual Education in the Senior Grades: The Peel Study through Grade 10,' *International Review of Applied Psychology* 25 (1976), 99-113.
6. The Reading Vocabulary and Study Skills sections of the Comprehensive Tests of Basic Skills and the Gates-MacGinitie Reading Tests are the standardized achievement measures referred to here.
7. In an article entitled 'An Experimental French Immersion Program at the Secondary School Level 1969 to 1974' in *Canadian Modern Language Review* 33, no. 3 (1977), 318-332, Genesee, Polich, and Stanley report on the grade 7 immersion and follow-up program in the schools of the Protestant School Boards of Greater Montreal. In that program, 85 percent of the curriculum is taught in French in grade 7, and in subsequent grades (8 to 11) students may take 40 percent of their curriculum in French. The researchers report immersion student comments to the effect that more French after grade 7 would be desirable
8. Oller, J.W., Jr. 'Cloze Tests of Second Language Proficiency and What They Measure,' *Language Learning* 23, no. 1 (1973), 105-118. Swain, M., Lapkin, S., and Barik, H.C. 'The Cloze Test as a Measure of Second Language Proficiency for Young Children,' *Working Papers on Bilingualism* 11 (August 1976), 32-42.
9. Burstall, C., et al. *Primary French in the Balance*. Slough, Berks.: National Foundation for Educational Research, 1974.
10. In the Burstall et al. study, experimental students who began the study of French as a foreign language at age 8 were sometimes later placed with comparison students who began French at age 11. This had the effect of reducing the initial advantage among those who began earlier, a situation similar to that of immersion students in Peel County, whose initial advantage also appears to be reduced by their being mixed with core French students at the higher grade levels.

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SPELLING IN THE WHOLE LANGUAGE CLASSROOM: *Winning the Support of Parents*

Ruth L. Scott

"What are you doing about spelling?"

This question is raised at parent-teacher interviews throughout the country. It is usually posed by parents who fail to see spelling being taught as they remember it — lists of words to memorize in isolation, errors written out five to ten times, every misspelled word corrected on all assignments. These parents worry that their children are being deprived of an essential communication skill which will have lasting repercussions on their future academic progress and occupational success.

Providing satisfactory answers to parents about the teaching of spelling is crucial. In today's whole language classrooms, we take great pride in the results of a child-centred environment which stresses active learning. We know that through the composing process, children learn to express themselves confidently in the written form and to make complex decisions regarding purpose, audience, form, and so forth. They become more sensitive readers while responding to the writing of their classmates. Within a thematic context, students explore a wide range of topics of personal interest, often on a level which would have been unheard of a generation ago. The benefits of a holistic curriculum are readily apparent to any whole language teacher.

There is a real danger, however, that the undeniable benefits of a child-centred program may be undermined by a wave of public pressure if we do not communicate adequately the role of spelling in our classrooms. Many important principles arising from current research in spelling have been poorly presented to parents, leaving the impression that spelling has disappeared from the curriculum. For example, the prevailing view that accurate spelling is not important in early drafts but only in the edited version of a piece of writing has been interpreted by many students and their parents to mean that spelling as a skill is no longer considered important. In addition, the fascinating findings of research on the developmental stages of spelling growth have often been viewed as a licence for not addressing spelling principles directly for fear of disturbing the child's normal growth toward conventional spelling. While some children absorb spelling patterns purely through the acts of reading and writing, the majority require the support of a knowledgeable teacher who will help them to see generalizations, and to make the transference to everyday writing.

The valid contention that spelling should not be viewed as a subject in isolation but rather integrated into the child's total program has also been misinterpreted in many instances. In some classrooms, this message has meant that spelling is addressed only when the student experiences difficulty with a specific word. That word may enter the child's personal dictionary, but is never placed in the context of larger spelling patterns and generalized to other words based on the same principle. Learning that the word "stirred" is spelled with a double r, for example, may be useful when the child wishes to spell "stirred" again. What happens, however, when the same child wishes to spell "stirring" or "tripped"? Will the structural principle for doubling consonants be generalized to the new words? For most children, such a sophisticated concept will only be understood and applied after viewing a number of similar examples and discussing the similarities with the teacher and fellow classmates. Some words, of course, do not conform to a larger spelling pattern, and must be learned individually. In such instances, students should have a repertoire of strategies for remembering the difficult parts of the word. Many of these skills can arise from discussing with a partner how he or she remembers the correct spelling. Such "tricks" as exaggerating the pronunciation of difficult letters, writing these letters in different colors, creating mnemonic devices, and using visual imagery can become techniques for studying a wide variety of words. The time spent helping the child become more self-reliant in spelling is worthwhile, and overcomes the tendency of the teacher to become a "walking dictionary."

A similar danger is inherent in basing spelling strictly on the themes addressed in class. If the teacher carefully examines the words relevant to the theme and helps the children see important spelling principles underlying these words, the discussions may be very fruitful. The students can work with these generalizations and apply them to other words in the theme and to their personal writing. On the other hand, if the class simply generates a list of 50 theme words and is expected to memorize 15 each week, there is questionable benefit. Knowing how to spell 50 words on the theme of "Spring Birds" may be useful while the unit is in progress, but it is doubtful whether many of these words will remain in the child's spelling vocabulary once the topic switches to "Dinosaurs." Without the opportunity to examine spelling patterns and to discuss strategies for learning to spell words, the value of time spent on memorizing words from theme lists may be minimal.

In communicating with parents, then, teachers should first examine their approach to spelling and determine whether their students are, in fact, engaging in worthwhile activities. Having done so, it is much easier to convey a confident attitude when explaining the spelling program to parents. Teachers may find the following concepts useful when discussing spelling with concerned parents.

The Developmental Nature of Learning to Spell

Children pass through several developmental stages on the road to becoming conventional spellers. Teachers and parents must be sensitive to the child's current stage so as not to expect an understanding of spelling principles beyond the range of the child's ability at a given time. The young child, for example, who is still struggling with initial consonant sounds is unlikely to benefit from instruction on long vowel patterns. Similarly, structural patterns such as the doubling of final consonants when adding -ing or -ed are learned gradually, since they require a fairly sophisticated level of cognitive development. The more conversant teachers are with the details of each developmental stage, the more productive will

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be their conversations with parents. Rather than dismissing a parent's concern that a child is confusing short vowels in Grade 1 by saying, "They grow out of it," it would be more reassuring to outline the features of the early developmental stages and show how the child's spelling is in line with these characteristics.

It is also important to point out that knowing a child's current stage in spelling provides important information for assisting the child in moving to the next stage. A student who is experimenting with long vowel patterns, although not yet matching the conventional spelling, as in *bote* for *boat*, is likely to benefit from activities which involve the classification of words by long vowel patterns. The teacher, then, serves as a vital support to students in their progress toward conventional spelling.

Parents should also be aware that the developmental stages of spelling growth continue well into the adolescent years. Early research on invented spelling focussed on pre-schoolers and children in the early grades. The stage beyond the transitional period was usually designated as "conventional spelling," leaving the impression that soon after the primary grades most children would quickly become competent spellers. More recent studies (Henderson, 1985; Schlagel, 1982) have revealed that children explore the spelling system over a number of years, probing the more complex levels of orthography as their own level of cognitive development progresses. Indeed, certain major generalizations about the spelling system are not comprehended until children are in the later elementary grades when their level of vocabulary development enables them to explore the relationships between base words and derived forms (compose – composition; condemn – condemnation), as well as the influence of Greek and Latin roots on the spelling system.

More recent studies have revealed that children explore the spelling system over a number of years.

The Composing Process

Parents need to be given a basic explanation of the process approach to writing if they are to understand the principle that accurate spelling is essential only in the edited version of a work. They should be shown samples of early drafts in which the child is struggling with questions of purpose, form, and audience, as well as later drafts in which the mechanics of transcription are the focal point.

Teachers should also be prepared to explain how spelling is addressed within the composing process. Editing conferences provide excellent opportunities for the diagnosis of individual difficulties with specific words or certain spelling generalizations. Such sessions may lead to informal discussions of the spelling pattern in question, or could be dealt with in a small group setting if several students are experiencing the same difficulties. Peer editing should also be described, accompanied by specific proofreading checklists or procedures used in peer conferences.

Parents will be able to understand the value of process writing better if they see the ways in which polished pieces are published and celebrated. When given the opportunity to speak with individual authors about their work, parents will undoubtedly sense the intense pride and commitment generated by meaningful writing experiences, and the built-in motivation to edit and polish such work.

Spelling in the Context of Themes

Teachers must be able to explain to parents how spelling can be addressed meaningfully within a theme-based program. As mentioned previously, it is not enough to generate a list of words based on the theme and simply require the students to memorize the spelling of these words. There are many opportunities for spelling growth within any thematic unit. The very act of reading good literature and relevant reference material exposes students to language patterns and helps them to consolidate many high frequency words. Opportunities for personal writing and interesting projects related to the unit will motivate the children to produce work which they are proud to share with a wider audience.

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The perceptive teacher will also highlight spelling patterns particularly appropriate to the topic at hand. To use an earlier example of a "Spring Birds" theme, the concept of compound words would be an obvious pattern to develop, since so many common names of birds are compound words. Similarly, a "Dinosaur" theme would lend itself to a study of basic Greek roots (dino + saurus) as well as Greek prefixes and suffixes used in scientific terminology. The spelling concepts chosen, of course, must also take into account the levels of spelling development within the class.

Activity centres are an excellent vehicle within a thematic context for reinforcing spelling concepts and encouraging an overall sensitivity to language. Word searches, crossword puzzles, classification activities, dictionary games, riddles, rhyming activities, codes, and word building exercises are but a few of the possibilities for independent or small group work.

When parents see the meaningful connection between thematic activities and the opportunity for growth in spelling, there is likely to be increased support for an integrated approach to spelling.

Spelling Texts

Many parents equate an adequate spelling program in their child's class with the presence of a spelling text which is rigorously followed by the teacher. On the other hand, many whole language teachers automatically equate the presence of a commercial spelling text with antiquated, ineffective practices. Both views tend to be overly-simplistic. A spelling text, assuming it is based on a sound knowledge of the spelling system and is linked to the developmental stages of learning to spell, can be a legitimate tool for teachers. The advantage of a well-constructed series is that it can provide the critical knowledge base for growth in spelling: a systematic, sequenced presentation and study of the major spelling patterns in the English language (Templeton, 1986).

A text must never be seen, however, as the total spelling program. If the exercises in a text are dealt with in isolation from other aspects of the language program, little transference is likely to occur within the child's daily work. The formal study of spelling concepts must be balanced and reinforced with informal opportunities for spelling growth within the context of the writing program, themes, and the enjoyment of literature. The child's writing folder, for example, can provide important information as to whether or not certain spelling concepts have been grasped. If weaknesses are found, formal study of these principles may be called for. Subsequent writing opportunities may reveal whether the child has been able to apply these concepts to everyday writing. In a similar fashion, the child's performance on activities within themes may point to other areas of need. The teacher may choose to deal with these needs informally at the time, or pursue them in a group context with or without the support of a commercial spelling text.

The presence or absence of a formal spelling text, therefore, must not be the basis on which a teacher's spelling program is judged. Far more important is the teacher's ability to link the child's needs with the appropriate spelling concepts in a manner which maximizes the chances for transference to everyday writing. Such an approach will balance the formal and informal treatment of spelling and will constantly reinforce newly acquired concepts throughout the language program. Henderson (1986) suggests that "skilfullness in meeting this responsibility is the hallmark of a talented teacher" (p. 167).

> *The presence or absence of a formal spelling text must not be the basis on which a teacher's spelling program is judged.*

The key to enlisting parental support for an integrated spelling program begins with an honest self-appraisal by the teacher. Is mere lip-service being paid to spelling in the classroom? Are students engaged in meaningful activities which are likely to result in improvements in their overall spelling ability? Are the children actively involved in discovering underlying patterns in written English? In short, does the spelling program reflect the principles of active learning in a child-centred environment? If the teacher can answer these questions with confidence, and communicate these principles with conviction, much of the parental concern regarding the "new" approach to spelling will evaporate. Rather than cringing when asked, "What are you doing about spelling?", the teacher will be eager to share these exciting insights with parents. ☐

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Steven Katz and Lorna Earl

The Paradox of Classroom Assessment

"Marks really do not fit with the thrust of the curriculum we are using."

"How do you know that a kid 'appreciates'? That is really, really tough to measure."

"The interim report asks for satisfactory or not satisfactory. Well, what is satisfactory? Who defines what is satisfactory? Is it 50s, 60s, 70s? It's not really clear. And if it's not clear to us it's not clear for the parents."

"I modified the program so they can be successful. Well, what is successful? Is successful 50%, 60%, 80%? When you modify for those children so that they are successful, if you have a watered down program to the extent that these children are, on paper, a success, and they go off to high school and those modifications aren't met, you've watered it down to the extent that it's not a true outcome."

(from Earl & Katz, in press)

While assessment of students in terms of expressed goals has always been a central feature of schooling, recent concern with accountability has led to an increased focus on programs that assess students against "objective" standards. The outcomes of such assessment programs can then be used to judge not only children relative to each other, but also classrooms, schools, provinces, and nations. Teachers, understandably, are poised halfway between the children they serve and the mandated "objective" standards. Their conflict is apparent in the comments above—comments from real teachers grappling with changes in classroom assessment. In this article, we identify the roots of the conflict.

Schools are the institutions charged with the transmission of competencies from generation to generation. Teachers, however, are caught between two sets of responsibilities in their classes. They are required to ensure that students meet fixed and predetermined goals, yet they are very aware that their students are individuals with varied backgrounds, interests, and understandings (Clay, 1996; Olson & Katz, in press). Contradictions inherent in classroom assessment practices become unavoidable because each of these elements map onto a different conception of competence.

There are, at least, two very different conceptions of competence at play on the landscape of formal education (Katz, in press). What are these two contrasting notions of competence? What are their implications for assessment? In answering these questions, we expose the paradox of classroom assessment.

There are, at least, two very different conceptions of competence at play on the landscape of formal education.

"The Known"

"Now, what I want is Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else, and root out everything else. You can only form the minds of reasoning animals upon Facts: nothing else will ever be of any service to them..."

So went the opening rant of Dickens' character, Mr. Thomas Gradgrind, as he presented himself to "...the little pitchers before him, who were to be filled so full of facts." Although, these days, no one urges just the facts, competence defined in terms of the possession of knowledge is a well-established feature of schooling. Students arrive at school with minds considered devoid of the necessary facts, rules, and principles which must then be transferred in a unidirectional fashion from the instructor, text, or other authority. Teaching becomes an exercise in telling, and learning an exercise in remembering (Olson & Katz, in press).

The substance of what is told (taught) and what is remembered comes in the form of propositional knowledge, knowledge that is taken to have an existence independent of the individual knower. The general assumption is that knowledge is found not made, that truth is "the truth," not that which is taken to be true. Few people ever doubt this traditional view of "the known." For most, knowledge is certain and permanent, and viewed as either right or wrong. Chandler, Boyes, and Ball (1990, p. 377) caricaturize this "absolutist" statement of knowledge as a "free-standing attribute of the environing world that only secondarily comes into the passive possession of those who, because they happen to be in the right place at the right time, automatically end up with some portion of the unmitigated truth directly embossed upon the recording equipment of their minds." Disagreements between people, then, can be attributed to the lack of facts among one of the parties, or the reins of certainty are pulled in by reference to a disagreeable position as "just your opinion."

In this view, appropriate authorities authenticate "the truth." Belenky *et al.* (1986) call this "silent knowing," in which the individual accepts the authority's proclamation about what is true. There is no belief that the knower can learn from his or her own experiences and knowing does not belong to the individual. This external definition of "the known" provides clear specifications as to what is to be taught. Nowhere is this manifestation more evident than in formal curriculum documents that embody those truths.

What is especially interesting from our assessment-centred perspective is that in pro-

viding such clear specifications of "the known" as that which must be taught, the formal curriculum also provides an associated set of standards for assessing learning achievements. Classroom assessment becomes the vehicle for gauging the closeness of fit between what is told and what is remembered (Earl & Katz, in press). The evidence used to justify beliefs as "knowledge" is traceable to authorities (e.g., books, teachers, media). Since "the truth" is acquired from appropriate authorities, justification for belief normally takes the form of what Belenky *et al.* (1986) have termed "received knowing." That is, evidence consists of congruity with the authority, be it person or text.

Assessments of all kinds—from questioning in class to formal examinations—operate to perform this "concordance check." A common classroom pattern is the IRE sequence (Initiate, Respond, and Evaluate), where the teacher asks a question, a student responds, and the teacher gives feedback (Alvermann, O'Brein, & Dillon, 1990; Cazden, 1988). Unlike questions which are genuine requests for information, in classroom questioning teachers are aware of the answers they are looking for (Applebee, 1996). Thus, Gradgrind's request for his star, "well-crammed" pupil, Bitzer, to define a horse has nothing to do with Grandgrind's knowledge or interest in the equine domain and everything to do with gauging the congruity of Bitzer's definition of a horse with that given by the dictionary as:

"Quadruped. Graminivorous. Forty teeth, namely, twenty-four grinders, four eye-teeth, and twelve incisive. Sheds coat in the spring; in marshy countries, sheds hoofs, too. Hoofs hard, but requiring to be shod with iron. Age known by marks in mouth. "

The point is further illustrated by the experiences of those who have worked with younger children and received one of the following answers to a less than honest "why" question: "Because you said so" or "Because the book said so."

By defining that which is "known" and subsequently what must be taught, the formal curriculum is essentially selective (Glaser & Silver, 1994). We have, as just one illustration, the provincial government of Ontario introducing a highly centralized, domain-specific provincial curriculum which spells out exactly what students will know and when. For example, in mathematics, by the end of Grade 8 students will "represent whole numbers in expanded form using powers and scientific notation (e.g., $347 = 3 \times 10^2 + 4 \times 10 + 7$; $356 = 3.56 \times 10^2$)" (Ontario Ministry of Education and Training, 1997, p. 26). The surrounding rhetoric explains the ease with which children will be able to move between school board jurisdictions, given the new-found consistency in what is to be taught and learned.

The virtue of such a specific curriculum is its direct relationship to what must be taught. This specification sets the stage for a rather specific definition of accountability, accountability defined as a kind of surveillance mechanism which proceeds by way of a congruity check. What is prescribed by the formal curriculum necessarily exists apart from individual teachers and their students. It is a blueprint for common action and by definition a yardstick for common evaluation, hence systemic accountability. In this way, it is possible to begin to talk about a target competence "norm" or "benchmark."

Assessment, in this sense, is about judgment, judgment about who will go on and where they will go, or, to put it differently, about who is competent and who is not.

While today's classrooms exemplify the educational vision detailed above, they are also characterized by more than simply a concern for "the known." In this conception, personal beliefs, indeed, personal interests and backgrounds are relegated to the substandard positions of speculation and opinion.

"The Knower"

In contrast to Bitzer's definitional exactitude, young Sissy Jupe includes her *experiences* with the animal in her definition of a horse. This definition meets with the Gradgrind reply, "Girl number twenty unable to define a horse! Girl number twenty possessed of no facts, in reference to one of the commonest of animals!" However, much of what we see in today's classrooms accepts, indeed encourages, what is known subjectively and experientially and seeks to develop it. This image of respect for the child's point of view is one well captured in the writings of John Dewey. In nature, he argued, thinking is stimulated by real problems that the learner has a personal vested interest in solving (Dewey, 1902/1966).

Child-centredness is, by now, a dominant theme in both cognitive-developmental and sociocultural perspectives of education. Learning is seen to occur as previously acquired cognitive structures are coordinated to form new superordinate structures. Initially, structures develop from concrete experiences, and thinking remains concrete until the coordination of structures allows for the emergence of abstract thought. Cognitive development is regarded as a socially mediated process. The conversation metaphor (Applebee, 1996) is a popular one, with participation in classroom discourse serving as the vehicle through which meanings are constructed.

In considering the child's point of view, the mind is acknowledged as a place of privately held beliefs and ideas (Olson & Bruner, 1996; Olson & Katz, in press). Children are seen as individuals capable of making sense of their world both through their interactions with the environment and with others. Learning, then, is a process of subjective interpretation, while teaching creates opportunities for sharing beliefs through collaborative discourse.

Defining competence in terms of "the knower" leads to a very different set of assumptions than those discussed in connection with "the known." In recognizing that "the known" is neither God-given nor an indisputable fact of nature, knowledge is viewed as fundamentally made, not found, and consequently uncertain. Truth is seen as varying from person to person and knowledge is interpreted subjectively. Belenky *et al.* (1986) use the term "subjective knowing." Personal beliefs count as evidence for knowing. To justify beliefs is to share them with others. Competence is seen as drawing ideas together in a way that makes sense.

This notion of competence provides a new perspective on classroom assessment. Learners, as interpreters, necessarily construct somewhat different interpretations of any text or event. Classroom assessment in this view is the mechanism that promotes the interpretation and revision processes of the learner. It is something best accomplished by the self since it is the knower who holds privileged access to the relevant beliefs and intentions, though they are also obliged to give a public account. This accounts for the interest in portfolios and other self-assessment vehicles (Earl & Cousins, 1996; Wilson, 1996) which promote students' articulation of their own reasons for their beliefs and opinions rather than right answers as dictated by an authority (Buchmann, 1986).

When reasons replace right answers, assessment, as we have seen, becomes in large part the responsibility of the knower; the knower has to justify his or her views. Assessment opportunities in classroom patterns can change too, from IRE to ICE (Ideas, Connections, Extensions). ICE encourages students to form and share their own ideas, connect them to one another, and extend them beyond personal experience (Wilson, 1996). Gardner (1990) has proposed "individually configured excellence" as a title reflective of this adaptive model of education. Schooling works to identify and develop sources of competence in individual students. It takes individual backgrounds, interests, and understandings into account.

Conceptions of education driven by a concern for "the knower" have their own limitations. When competence is seen as purely subjective, truth becomes variant and certainty is elusive. As Chandler and colleagues (1990, p. 379) comment, "... all claims are challenged, every heart-felt belief is held up to ridicule, and all action is seen as permanently premature." The problem here is that in the absence of certainty, all beliefs appear equal. It is this very phenomenon that supports mediocrity or, as Neatby (1953) puts it, a system of education that offers "so little for the mind." Without objective standards, and the associated norms or benchmarks, systemic accountability becomes problematic for both individuals and educational institutions. It is in terms of such standards that schools are held accountable for fulfilling an institutional mandate, a mandate generally advanced in terms of those very standards.

The Paradox Exposed

Educational theory for much of the last century attempted to come to grips with this gap between what is known generally and should be transmitted, and what is known subjectively and should be developed. Yet this effort typically consisted of little more than staking opposing claims on the epistemological battleground. Classical education theory considered knowledge to be an entity that exists in some tangible form capable of being transferred intact to children. Educational reformers, such as Dewey, took the other pole insisting on the primacy of subjective and communal experience as the basis of all knowledge.

Although theorists have been more or less content to operate in spheres defined by one epistemology or the other, teachers do not enjoy the luxury of the separation. Both elements are necessary in communicating something about the learner to the learner and to others. They each provide a way of thinking about the self and serve as vehicles through which children come to think of themselves as competent on the one hand or incompetent on the other. The challenge to educational researchers and practitioners is very simply—how to reconcile them? **O**

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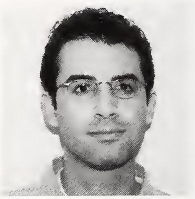

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Instructionally Intelligent . . .

Socially smart

Barrie Bennett

The rationale for this article, and the *Orbit* issue, stems from my experience with educators from around the world. We simply do not have a common way of thinking about instruction and how it plays out in the classroom. Jerome Bruner's comment is apt, that what we lack in education is a clearly articulated theory of instruction.

Any artist can go to an art store and purchase paints; any teacher can attend a workshop to acquire additional instructional processes. The artists can say they are cubists; the teachers can say they are constructivists. That does make those people artists or teachers. Having a repertoire and philosophy are insufficient necessities in becoming artistically or instructionally intelligent.

Effective teachers, like effective employees in all occupations, have ways of thinking about what they do and a corresponding repertoire of ways to do things. Hundreds of books on education contain hundreds of methods on how and what to teach. Yet we take for granted that teachers are instructionally skilled.

Some of you would no doubt appreciate a clear definition of instructional intelligence. I can't provide that. But I can tell you that a number of areas must be integrated in order for an educator to demonstrate instructional intelligence:

- having a rich and meaningful repertoire of ways to assess learning
- having a deep knowledge and ability to intersect multiple content areas
- having an extensive understanding of how students learn
- having an extensive repertoire of instructional methods that you can integrate in a variety of ways
- having the ability to wisely go about the process of educational change;
- having a personality that encourages students to walk into your room.

Perhaps you can list others.

THE QUESTION

What are you thinking about when you decide to give a mini-lecture or assign group work or a Venn Diagram? Perhaps you decide to use Reading Recovery or a process as simple as Think Pair Share. What leads you to these decisions?

Consider the Think Pair Share tactic which is one of the least complex of approximately 300 co-operative learning tactics. Think about all the things the teacher could or should consider if Think Pair Share is going to be applied effectively. If we employed a rubric, what would Level Four look like for the teacher who employed this process in the classroom? Before I respond to this question, I would like to illustrate why I believe instructional integration is worth considering.

DEVELOPING A PERSPECTIVE ON INSTRUCTIONAL INTEGRATION

In a playful way this article is working at illustrating the unlimited and delightful possibilities that exist in the design of powerful learning environments. I am arguing for a more integrationist position; one that realistically reflects how experienced and effective teachers create learning environments … and create those environments in the moment as they sense, select, integrate, and respond to the endless classroom pressures and possibilities.

> *Effective teachers, like effective employees in all occupations, have ways of thinking about what they do and a corresponding repertoire of ways to do things.*

At the simplest level, what the public asks of teachers is to demonstrate expert behaviour in the classroom—to do the best for kids. Also at the simplest level, expert behaviour is what we expect of someone who rebuilds the engine of a car or repairs a washing machine or rebuilds a hip or operates on our eyes. So, to expect expert behaviour from teachers seems reasonable. Of course when we step back and consider that teachers are spending five to six hours a day for approximately 200 days a year with approximately 25 to 30 students, it may appear to be more akin to being reasonably impossible. Teachers are not simply one-on-one with a piece of technology or with the needs or problems of one or two clients—as in banking or medicine or law.

So, what is expert behaviour? At the broadest level, expert behaviour is what one person does as the result of intense and thoughtful effort over time; about ten years of intense effort (Bereiter & Scardamalia, 1992). Paralleling that literature, the research on intelli-

INSTRUCTIONAL TACTICS

PMI—Positive, Minus, Interesting • *(A thinking organizer)*
PMI assists in making wise decisions—it is often connected to the area of critical thinking.

- Positive—Reasons why something is a good idea or decision.
- Minus—Why something won't work or is an unwise idea.
- Interesting—The position or action one takes having balanced out the Positives and Minuses.

EBS—Examine Both Sides • *(A thinking organizer)*
EBS is connected to the process of critical thinking—searching for truth. This tactic encourages students to look at the world from another's perspective, unlike a debate where students select and defend one position.

Fish Bone • *(A graphic organizer)*
Fish bone is used to organize information and is often used in problem solving or to identify and organize factors. The head of the Fish Bone provides the issue or idea that acts as the focus for the thinking, students organize ideas according to some type of classification of the main ideas and sub ideas.

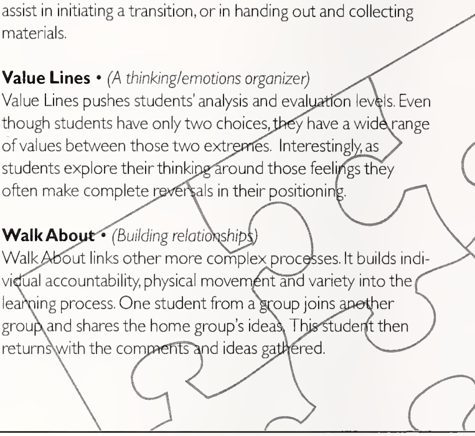
Venn Diagram • *(A graphic organizer)*
Venn diagrams are used to organize information and invite the learner to ask how are things the same and how are they different. Venn diagrams do not have to overlap and can occur as one circle within another or two circles not touching.

Think Pair Share • *(A group organizer)*
Students are asked to think to themselves, then share with a partner. To be effective, students must listen to each other and ensure that not just one student does all the talking. An alternative is Think Pair Square. One person talks, the next person has to paraphrase what the person said, then that person shares, and the next person has to share what that person said, etc.

Numbered/Lettered Heads • *(A group organizer)*
Groups number off (1, 2, 3) or letter off (A, B, C). An effective way of increasing the concept of accountability and assist in initiating a transition, or in handing out and collecting materials.

Value Lines • *(A thinking/emotions organizer)*
Value Lines pushes students' analysis and evaluation levels. Even though students have only two choices, they have a wide range of values between those two extremes. Interestingly, as students explore their thinking around those feelings they often make complete reversals in their positioning.

Walk About • *(Building relationships)*
Walk About links other more complex processes. It builds individual accountability, physical movement and variety into the learning process. One student from a group joins another group and shares the home group's ideas. This student then returns with the comments and ideas gathered.



gence reports that one's IQ is not a trustworthy factor in predicting success. The better predictor is intelligent behaviour. Perkins (1995) in his book *Outsmarting IQ: The Art of Learnable Intelligence* reports that intelligence is predicated on a combination of deep knowledge within multiple domains, the ability to recognize patterns, the ability to thoughtfully access an extensive repertoire of strategies, and taking time to reflect. I see "intelligent behaviour" as synonymous with *expert behaviour*.

What might some of the components of expert teaching behaviour be? We have asked that question of teachers and read the literature for the last 25 years. It seems that what we are asking of teachers is to take the influence of their personality and to integrate their understanding of content, of instructional processes, of assessment, and their understanding of the learner—to do it collectively (within the school and within the district) and be simultaneously empathetic, caring, enthusiastic, polite, humourous, organized, fair, with-it, and assertive.

> *Teachers are not simply one-on-one with a piece of technology or with the needs or problems of one or two clients—as in banking or medicine or law.*

What we are after is supporting teachers on a journey to become experts. We want expert teachers who collectively demonstrate intelligent behaviour in the design of powerful learning environments. And we want all the players in this process to become key players in the design and support of that journey. They must collectively have the ability to initiate, implement, and sustain educational change.

Currently, too much instructional information is raining down on teachers' heads. Perhaps it is time to consider the whether; whether or not teachers can meaningfully implement everything they are being asked to implement. Below I present an organizer that attempts to make some sense of all these instructional methods.

Organizer

So how do you make sense of all the instructional possibilities? Here's a list of instructional "stuff" that you as a teacher have as resourses. How would you invite them to play out in the design of a learning environment in your classroom?

- Think Pair Share
- cooperative learning

INSTRUCTIONAL TACTICS

Gallery Tour *(A processing tactic)*
A student tapes or pins up a work completed by his/her group then stands by it and explains it to a small group of other students who visit. About 2/3 of the class are touring and 1/3 are sharing. They then rotate until each person has had a chance to share.

Inside Outside Circles *(A sharing tactic)*
Students are placed in two circles—one circle within the other, each student facing another. Students have 15 to 30 seconds to think about the question on the board, then the inside person is asked to share with the person on the outside their attempt to solve the question. Then the outside person shares or extends the thinking of the inside person. Then the outside people rotate one to the left or right, ready for the next question and interaction with a new person.

Four Corners *(An evaluation tactic)*
Begin with a statement, issue or question and students choose a corner that best captures their perspective, view or response, e.g., strongly agree, agree, strongly disagree and disagree. They move to that corner and share with the others their why they made that decision.

Three Step Interview *(Check for understanding tactic)*
Students are encouraged to share their thinking, ask questions and take notes. Each student is assigned a letter, then each is assigned a role: A=Interviewer, B=Interviewee, C=Reporter. The roles rotate after each interview.

Excerpted from Barrie Bennett and Carol Rolheiser, *Beyond Monet: The Artful Science of Instructional Integration* (2001) Toronto: Bookation Inc.

Place Mat *(An organizing tactic)*
Groups of students work both alone and together around a single piece of paper to simultaneously involve all members. The paper is divided up into pieces based on the number of members in the group, with a central square or circle. Students record their reflections and ideas related to a key question or issue. Many variations are possible, from simply sharing with their group to each choosing their most important issue for the centre, to cutting out their section and recombining with other groups.

Graffiti *(An idea generating tactic)*
This creative brainstorming process involves collecting the wisdom of all or most of the class. Each group has a large piece of paper which has a topic (same or different) in the middle. Students get 30 seconds to think and then 60–90 seconds to individually but simultaneously record their ideas on the paper. They then stop, stand up, and go, as a group to a different piece of paper and again write their ideas. They continue until each group has visited each of the others.

Team/Games/Tournament *(Check for understanding tactic)*
TGT is usually employed as a check for understanding information that was taught or acquired. Students work in a home team of three and review the information learned. They then break into tournament groups where one student from each group gets together with two students, each from one other group. Tournament groups then respond to a number of questions that are on cards with the answers on the back. When they have completed the questions or the time is up, they return to their home team and add up the individual tournament scores. The group with the most points receives an incentive.

- brain research
- accountability
- wait time
- lecture
- responding to student responses
- mind mapping
- at-risk students
- gender issues
- success
- modeling/demonstration
- distributing responses
- concept attainment
- covert/overt
- convergent/divergent thinking
- learning disabilities research
- levels of thinking (Bloom's Taxonomy)
- checking for understanding
- three step interview
- academic controversy
- Jigsaw
- feeling safe
- brainstorming
- positive minus interesting (PMI)
- active participation
- multiple intelligence
- multiculturalism
- learning disabilities

Let's return to the question asked earlier: *"What are you thinking about when you decide to give a mini-lecture or assign group work or a Venn Diagram? Perhaps you decide to use Reading Recovery or a process as simple as Think Pair Share. What leads you to these decisions? Which items in the above list can be linked to Think Pair Share? "*

To initiate Think Pair Share, the teacher has to consider whether or not the students feel safe sharing with one another. The brain research informs us that the "brain" needs to feel safe. If it does not feel safe, then the student is not going to willingly engage in a paired discussion. You might also consider whether or not your students have the collaborative skills of "actively listening" and "paraphrasing" (cooperative learning) . . . what if they put each other down? In a parallel vein, consider whether or not they are ready to have "boys" talking to "girls" (gender) and will students talk with students who are not that popular (two other versions of safety). What if you have English as Second Language students (multiculturalism) or a student with autism or Downes Syndrome or a Learning Disability; what adaptations need to occur so that they can participate or not feel left out?

In order to get your students talking, one option you have is to frame a request or question. That implies a sensitivity to clearly framing questions or requests. What level of concern will you invoke; will they only share with each other or will some be randomly selected to share with the class? What if you simply ask them to share; how do you know they will both talk—what if one person is more talkative, the other quieter? What level of thinking (say from Bloom's or Aschner's Taxonomy) will you select in the design of the question? Will it be a convergent or divergent question (we know they serve different purposes)? Depending on the complexity of the question or the uncertainty of the question you must decide how much wait time to provide. We know that wait time increases success by allowing students to work in their heads first (covert thinking) before sharing their thinking (overt action).

Once they have shared, they are obviously going to do something—or else why invoke Think Pair Share? You must have had an objective or outcome. If not, why did you select it? Now, in deciding to randomly call on several students to respond, you must consider that you are asking students to succeed or fail publicly. How will you respond to their response? What if they give you a correct, incorrect, partially correct response, or a silly response, a guess, a convoluted response or even a no response? Should you suspend judgement or judge their responses? What effect will it have if you select one of those two judgement options? How will you make sure they save face?

Last, consider how you can integrate Think Pair Share with more complex instructional processes. What if you attempt to employ Jigsaw and the students cannot do Think Pair Share; even though Jigsaw demands they be skilled at Think Pair Share? What if you are involving students in Taba's Inductive Thinking strategy, Bruner's Concept Attainment Strategy, or the Johnsons' Academic Controversy. How can you actively involve all students in sharing their thinking and hypotheses if you do not activate something similar to Think Pair Share?

We have seen Think Pair Share fail on a number of occasions; and for good reason—it's easy to understand its structure, it's difficult to implement the process.

What follows is an attempt to explain the elegance that belies instructional simplicity—a way to group all the instruction "stuff" presented above. The groups have been created using "Hilda Taba's Inductive thinking strategy" and labelled according to the literature or instruction.

CHART 1. Conceptual Framework for an Instructional Repertoire

Pedagogy

1. Structure: The instructional concepts, skills, tactics, strategies, and organizers that a teacher can apply to affect learning.
2. Purpose: To increase the chances we more effectively meet the needs of the learner.
3. Examples: Interest (concept), Wait Time (skill), Think Pair Share (tactic), Mind Mapping (strategy), and Multiple Intelligences (organizer)
4. Argument: Pedagogical ideas and practices represent one of the critical distinguishing attributes of a teacher—pedagogy assists in constructing a meaningful learning environment.

Instructional Organizers

1. Structure: Frameworks that organize an array of instructional ideas and practices into an interrelated yet open-ended pedagogical set.
2. Purpose: They act as lenses that clarify or enhance communication and thought about instruction.
3. Examples: Multiple Intelligences, Learning Styles, Bloom's Taxonomy, Children at Risk, Learning Disabilities
4. Argument: They assist teachers in making decisions about the teaching and learning process through the needs and inclinations of the learner(s).

Instructional Concepts/qualities

1. Structure: Qualities of effective teaching and learning which teachers seek to enact through the application of a variety of instructional skills, tactics, strategies and organizers.
2. Purpose: Provide lenses to understand how, when, and where to apply one's instructional repertoire
3. Examples: check for understanding, humour, enthusiasm, accountability, relevance, caring, authenticity, novelty, meaningful
4. Argument: They increase the chances that a teacher more effectively selects and integrates those instructional processes that make a difference in student learning.

Instructional Strategies

1. Structure: These instructional practices involve a sequence of steps or a number of related concepts. They often have generic applicability across grade levels and subject areas.
2. Purpose: They have specific although varying effects on student learning. They can affect logical thinking; social thinking and action; memory; creative thinking, etc.
3. Examples: Cooperative Learning (Johnsons' approach: 5 factors and a process; Thelan's Group Investigation: 6 steps)—social theory; Mind Mapping (5 factors and a process—information processing and memory; Concept Attainment (3 steps)—information processing.
4. Argument: Their use is usually supported by research and theory. They engage students in powerful learning processes and provide alternatives in meeting the diverse learner needs. Compared to skills and tactics, strategies provide the largest effects on student learning. Note that they depend on skills and tactics for effective implementation.

AN IDEA FOR INSTRUCTIONAL DESIGN

David Perkins (1986) in his book *Knowledge as Design* argues that our thinking and actions are often limited because we lack understanding of the concepts that guide our thinking and actions. He contrasts having "knowledge as information" with "knowledge as design."

In our work over the last 15 years (Rolheiser, 1986; Bennett, Rolheiser, & Stephan, 1992; Rolheiser, 1997; Bennett, Anderson, & Evans 1997)we have employed Perkins' four questions to facilitate understanding:

1. What is the **structure** of the concept?
2. What are the **purposes** of the concept?
3. What are the **model cases** of the concept?
4. What are the **arguments supporting** or not supporting it?

For example, if the concept were screwdriver we would respond with:

1. **Structure:** a handle, a shaft and a shape on the end that fits into screws
2. **Purpose:** it assists us in putting screws into objects
3. **Model Cases:** Flat Head, Robertson and Phillips
4. **Argument:** It gives us mechanical advantage

We apply these four questions to clarify the concepts of Pedagogy, Instructional Organizers, Instructional Strategies, Instructional Tactics, Instructional Skills, Instructional Concepts, Integration and Stacking Instructional Processes, and Instructional Power. Obviously, Monet did not paint with one colour. Nor do master chefs limit themselves to one salad. Hair stylists, dentists, contractors all have an extensive repertoire of responses to respond to different situations. What is your repertoire, how do you integrate it, and how powerful is it in meeting the diverse needs of the learners?

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Instructional Tactics

1. Structure: An action usually invoked by the teacher that helps achieve a specific purpose, usually without a series of steps or phases. If steps or phases are present, they are less complex than those found in Strategies. Tactics cut across most subjects and grade levels, and may be linked to other instructional tactics and skills in the enactment of a broader strategy.
2. Purpose: To involve the student in an activity that has a particular purpose
3. Examples: de Bono's CoRT program (e.g., EBS—Examine Both Sides of an Argument; PMI—Plus, Minus, Interesting); Kagan's simpler cooperative learning structures (e.g., Think Pair Share, and Inside Outside Circles).
4. Argument: They are often employed to enrich the application of strategies.

Power

1. Structure: A statement (usually a number) that communicates the worthiness of something.
2. Purpose: It informs us of the effects we can expect to get as compared to other approaches.
3. Examples: how fast (time); how much (frequency or percent); what is remembered (total score); usually refers to an effect size statistic. Effect size represents how far you can move the mean score of one group (experimental group) away from another (the control group).
4. Arguments: The size of the effect assists us in making decisions related to what we decide to employ in the classroom, as well as, what we decide to learn as teachers as part of our professional development.

Instructional Skills

1. Structure: Specific and relatively simple instructional actions of teachers that enhance learning.
2. Purpose: They assist the teacher to mediate the gap between the learner and the learning and increase the chances that the more complex instructional processes are effectively implemented.
3. Examples: Framing questions at different levels of complexity, providing time to think after asking a questions, linking to the learners past experiences, checking to see if students understand and providing a visual representation (e.g., a model of the human heart).
4. Argument: Without them, we would find it difficult to engage some/all learners in learning. Without the skills, the power of the tactics and strategies is drastically reduced.

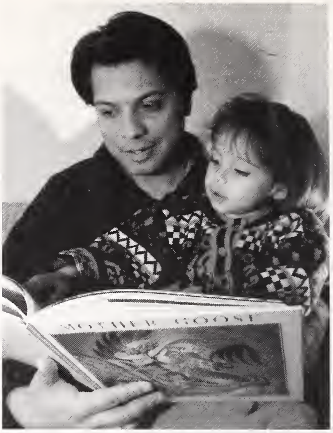
Integrating Pedagogy

1. Structure: The interconnected use of instructional organizers, concepts, skills, tactics, and strategies.
2. Purpose: To engage students in a variety of approaches to learning to achieve multiple effects.
3. Examples: The teacher starts by asking students to work with a partner to go through a Concept Attainment strategy to identify the essence of 'simile.' Next the teacher asks students to work alone to classify all the NO examples and testers into groups that represent other figures of speech. They then form cooperative groups of four, compare their classifications, and then the compare their thoughts with those of the teacher during a mini-lecture. Finally, the students work alone in small groups to complete a mind map on writing techniques.
4. Argument: To more effectively meet the diverse needs and abilities of learners.

Excerpted from Barrie Bennett and Carol Rolheiser, *Beyond Monet: The Artful Science of Instructional Integration* (2001) Toronto: Bookation Inc.

Reading and the ESL Student

Jim Cummins



Teachers need to know how to teach effectively in contexts where diversity is the norm and ESL students form a significant part of the mainstream student population.

This article synthesizes part of that knowledge base and focuses on reading development in particular, since reading is critical to all aspects of academic achievement.

- What do we know about ESL students' linguistic and academic development?
- How can we promote sustained reading development among ESL students?

Before these questions can be answered, clarification is needed as to what is meant by the construct of "language proficiency." Then issues such as the relationship between proficiency in English to students' academic achievement in English and the length of time it typically requires for students to catch up in English proficiency must be addressed.

THE NATURE OF LANGUAGE PROFICIENCY

In order to understand patterns of academic development among ESL students, we must distinguish between three very different aspects of proficiency in a language:

- conversational fluency
- discrete language skills
- academic language proficiency.

Each dimension follows very different developmental paths among both ESL and non-ESL students and each responds differently to particular kinds of instructional practices in school.

> *Students exposed to a literacy-rich environment in the home generally acquire initial literacy-related skills, such as phonemic awareness and letter-sound correspondences, with minimal difficulty in the early grades of schooling.*

CONVERSATIONAL FLUENCY

This dimension of language proficiency represents the ability to carry on a conversation in familiar, face-to-face situations. The vast majority of native speakers of English have developed conversational fluency when they enter school at age five. This fluency involves use of high frequency words and simple grammatical constructions. ESL students generally develop fluency in conversational aspects of English within a year or two of intensive exposure to the language either in school or in the environment.

DISCRETE LANGUAGE SKILLS

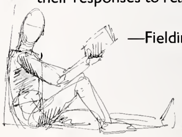
These skills reflect specific phonological, literacy and grammatical knowledge that students can acquire in two ways:

- through direct instruction;
- through immersion in a literacy- and language-rich environment either in home or school.

Learning the Language of Academic Success

Instructional components strongly related to reading comprehension outcomes:

- Large amounts of time for actual text reading.
- Teacher-directed instruction in comprehension strategies.
- Opportunities for peer and collaborative learning.
- Occasions for students to talk to a teacher and one another about their responses to reading.



—Fielding and Pearson (1994, p. 62)

Students exposed to a literacy-rich environment in the home generally acquire initial literacy-related skills, such as phonemic awareness and letter-sound correspondences, with minimal difficulty in the early grades of schooling.

Some of these discrete language skills are acquired early in schooling and some continue to be acquired throughout schooling (e.g., spelling).

The discrete language skills acquired early include:

- knowledge of the letters of the alphabet,
- the sounds represented by individual letters and combinations of letters, and
- the ability to decode written words into appropriate sounds.

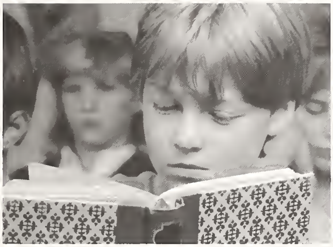
Some of these skills such as phonemic awareness and knowledge of the letters of the alphabet show consistently moderate relationships with the acquisition of word decoding skills (Snow, Burns, & Griffin, 1998; National Reading Panel, 2000).

ESL students can learn these specific language skills concurrently with their development of basic vocabulary and conversational fluency. However, little direct transference is observed to other aspects of oral language proficiency such as linguistic concepts, vocabulary, sentence memory, and word memory (Geva, 2000; Kwan & Willows, 1998). Similar findings are reported by Verhoeven (2000) for minority language students in the Dutch context and by Lambert and Tucker (1972) for English-speaking students in French immersion programs. [1]

ACADEMIC LANGUAGE PROFICIENCY

This dimension of proficiency includes knowledge of the less frequent vocabulary of English as well as the ability to interpret and produce increasingly complex written language. As students progress through the grades, they encounter far more low frequency words (primarily from Greek and Latin sources), complex syntax (e.g., passives), and abstract expressions that are virtually never heard in everyday conversation. Students are required to understand linguistically and conceptually demanding texts in the content areas (e.g., literature, social studies, science, mathematics) and to use this language in an accurate and coherent way in their own writing.

The fourth grade slump refers to the phenomenon whereby low-income students who demonstrate grade-level reading performance in the primary Grades (1–3) begin to fall significantly behind grade norms starting at Grade 4



Acquiring academic language is challenging for all students. For example, schools spend at least 12 years trying to extend the conversational language that native-speaking children bring to school into these more complex academic language spheres. It is hardly surprising, therefore, that research has repeatedly shown that ESL students, on average, require at least five years of exposure to academic English to catch up to native-speaker norms (Cummins, 1981; Klesmer, 1994; Worswick, 2001).

In addition to the complexity of the academic language they are attempting to acquire, ESL students must catch up to a moving target. Every year, native speakers are making large gains in their reading and writing abilities and in their knowledge of vocabulary. In order to catch up to grade norms within six years, ESL students must make 15 months gain in every 10-month school year. By contrast, the typical native-speaking student is expected to make 10 months gain in a 10-month school year (Collier & Thomas, 1999).

All three aspects of language proficiency are important. However, policy-makers and the media frequently confuse them. Many ESL students who have acquired conversational fluency and decoding skills in English are still a long way from grade-level performance in academic language proficiency (Cummins, 2001; Krashen, 2001). Students who can "read" English fluently may have only a very limited understanding of the words they can decode. As documented in the following sections, direct instruction approaches that can be effective in developing decoding skills are of very limited utility in promoting reading comprehension and academic language proficiency more generally.

THE FOURTH GRADE SLUMP PHENOMENON

The differences between academic language proficiency and both conversational fluency and discrete language skills are highlighted by what is commonly termed the *fourth grade slump* (Chall, Jacobs & Baldwin, 1990; Rand Reading Study Group, 2002).

The fourth grade slump refers to the phenomenon whereby low-income students who demonstrate grade-level reading performance in the primary Grades (1–3) begin to fall significantly behind grade norms starting at Grade 4, with the discrepancy growing larger with each succeeding grade. Chall and her colleagues reported that Grades 2 and 3 low-income students were on grade-level on tests of word recognition, oral reading, spelling and word meaning. However, between Grades 4 and 11, the extent of deceleration in reading performance was "overwhelming" (1990, p. 43). Chall et al. attribute these trends to low-income students' weakness in academic vocabularies. They point out that at Grade 4 and beyond, "the reading materials become more complex, technical and abstract and are beyond the everyday experiences of most children" (1990, p. 45). In the primary grades where students were on grade-level in word meaning, most of the words students were asked to

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[1] *On the basis of these trends, Geva (2000) suggests that two criteria may be useful in identifying reading disability among ESL students: a) delayed development of discrete language skills such as phonological processing and rapid automatized naming that cannot be attributed to inadequate instruction; b) significantly better performance on listening comprehension than on reading comprehension measures.*

The research is unequivocal in showing strong relationships for both first language and second language learners between opportunities to read and development of vocabulary and reading comprehension abilities

define were common, familiar and concrete words. Chall et al. note: "Whereas the major hurdles prior to Grade 4 are learning to recognize in print the thousands of words whose meanings are already known and reading these fluently in connected texts with comprehension, the hurdle of Grade 4 and beyond is coping with increasingly complex language and thought" (1990, p. 45).

Numerous other studies have documented either significant gaps between decoding and comprehension performance or actual declines in reading comprehension among low-income students in the later grades of elementary school (Becker & Gersten, 1982; Venezky, 1998). These trends characterize direct instruction and scripted programs that place much more emphasis on the development of phonics and phonemic awareness in the early grades than on the expansion of vocabulary and reading comprehension abilities through extensive engagement with authentic texts. For example, Becker & Gersten (1982), in discussing students' performance on the DISTAR direct instruction program used between kindergarten and Grade 3, document significant declines in three school districts between Grade 3 and Grade 6 in Total Reading percentiles of the Metropolitan Achievement Test. In these districts, students' performance fell from the 31st to the 16th percentile, the 52nd to the 26th percentile and the 28th to the 17th percentile respectively. In a fourth district, there was a decline between Grade 3 and Grade 5 from the 40th to the 20th percentile.

A similar gap between word-level decoding and reading comprehension skills has been noted by Venezky (1998) in reviewing data from the *Success for All* program which follows a highly controlled scripted approach. According to the Rand Reading Study Group, "the reading comprehension scores of disadvantaged children who were graduates of this program were substantially below national normative standards despite the fact that their scores on measures of word-level skills (word recognition, letter-sound decoding) were comparable to national standards" (2002, p. 93).

In short, the fourth grade slump reflects the fact that neither "language proficiency" nor "reading ability" are unitary constructs. Reading comprehension does not develop automatically on the basis of decoding skills; similarly, academic language proficiency is largely unrelated to students' conversational fluency in English or their knowledge of discrete language skills. A core component of academic language proficiency is vocabulary knowledge and the vocabulary load in the curriculum increases dramatically after the primary grades. The development of academic language proficiency, for both ESL and non-ESL students, requires that students gain access to academic language by means of extensive reading and also that they are supported in harvesting the language they encounter in literature and content area texts.

Extensive reading is crucial for academic language development because less frequent vocabulary, most of which derives from Greek and Latin sources, is found primarily in written text. According to Corson: "Printed texts provided much more exposure to [Graeco-Latin] words than oral ones. For example, even children's books contained 50% more rare words than either adult prime-time television or the conversations of university graduates; popular magazines had three times as many rare words as television and informal conversation (1997, p. 677)."

The research is unequivocal in showing strong relationships for both first language and second language learners between oppor-tunities to read and development of vocabulary and reading comprehension abilities (e.g., Elley, 1991; Postheltwaite & Ross, 1992). Research also supports the importance of explicit instruction in comprehension strategies and explanation of word meanings (Biemiller, 1999; Rand Reading Study Group, 2002).

By contrast, the teaching of phonics is largely *unrelated* to reading comprehension among normally-achieving and low-achieving readers after kindergarten and Grade 1 (Ehri, Nunes, Stahl & Willows, 2001). This pattern is illustrated in the Postlethwaite and Ross (1992) study of reading achievement in 32 systems of education

CHART 1

A Reading Achievement Study

Indicators Predicting Reading Comprehension

Ranking	Variable
Home	
02	Amount of free voluntary reading
12	Frequency of borrowing books from library
School Resources	
08	Amount of reading materials in school library
14	School resources (school library, reading room for students, student/school newspaper)
19	School library books per student
School Initiatives	
16	Sponsoring of reading initiatives
Classroom Conditions and Teacher Practices	
03	Reading in class
11	Classroom library
18	Frequency of visiting school library
Teacher Methods	
09	Comprehension instruction (deliberate emphasis on text understanding)
17	Emphasis on literature (encouragement of silent reading, listened to student reading, focus on library skills, etc.)
41	Phonics teaching

—(Postlethwaite & Ross, Effective Schools in Reading, 1992. These rankings are based at Grade 4 level)

Academic language proficiency is largely unrelated to students' conversational fluency in English or their knowledge of discrete language skills.

around the world. More than 50 variables were ranked in order of importance for reading comprehension at Grades 4 and 8 levels. *(See chart 1)*

In short, immersion in a rich literacy environment where students have ample encouragement and opportunity to read (and write) extensively is crucial for the development of reading comprehension and academic language proficiency. This is true for all students but it is particularly significant for ESL students who are attempting to catch up to native-speakers in academic language proficiency. **O**

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When Readers-at-Risk Teach Student Teachers

David Booth

Nadeen taught me the invaluable role that individualized attention and instruction can play in the life of a child having difficulties in becoming a reader. I am still surprised by how many issues in teaching and schooling were generated by my time spent with her.

—Student Teacher

Those of us who work in the one-year preservice program, preparing student teachers for their professional debuts as educators, are constantly made aware of the disconnections that some students find between theory and practice. Since the student teachers begin their classroom visits almost immediately at the beginning of their first term, they recognize quickly the need for strategies and techniques for classroom practice that will engage them meaningfully in the lives of the learners in the place called school. And we as instructors, along with the associate teachers responsible for the children in their care, and these novice student teachers, are all involved in this complicated dynamic driven by the requisites of classroom practice throughout the next ten months.

A large body of research conducted over the last dozen years by educators such as Michael Fullan (2001), Linda Darling-Hammond (1997) and John Goodlad (1994), highlights the need for new teachers to acquire a strong theoretical foundation for their teaching practice. How we who work in teacher education are to support this in an integrative and significant way is the question we hear ourselves asking each year.

With the mentoring support of their associate teacher, each student teacher was responsible for assisting a student-at-risk in literacy throughout their year in the teacher education program.

For several years, I had the good fortune to be a team member in a primary/junior cohort based at an elementary school in Toronto. Sixty student teachers gathered at this off-campus school site each day, along with our teaching team, to participate in lectures, workshops and demonstrations concerning the profession of teaching. As well, all of us were part of the culture of the school, from entering with the children at 8:45 a.m. each morning, observing them at recess and in the halls, and, most fortunately, being permitted to visit and work in the classrooms alongside these generous and professional associate teachers. For me, this environment held a strong potential for turning theory into action.

DESIGNING THE LITERACY PROJECT

It was this setting that allowed us to develop an unusual and powerful literacy program that would involve each of our student teachers working with a child who was having difficulty

CHALLENGES

- Concern for labeling of students in the program.
- Finding time to plan for and reflect upon the work of the student teachers.
- Withdrawing students from the classroom or carrying out sessions within the regular classroom procedures.
- Discomfort sharing background information about the student with student teachers.
- Classroom programs conflicted with student teachers' information from . readings and lectures—negotiation required.
- Resources difficult to obtain (student teachers bought their own).
- Degree of trial and error in novice student teachers' techniques—required feed-back sessions to share and discuss observations.
- Student teachers had to return to our teaching centre during the week to continue their tutoring of the at-risk child. (E-mail holds strong potential, especially with the older students.)
- When student teachers grow attached to their students, they have to rethink their role as professionals—especially hard when many of these children need support in other aspects of their lives.

in becoming a proficient reader and writer. Each of our 30 teacher/associates selected two students with specific needs in literacy, taking into account the way in which each of the classrooms functioned, and how a student teacher could best be accommodated within that frame.

Because our team had arranged for our student teachers to spend one day a week in classrooms in our host school, we were able to designate one half day devoted to the literacy project. We began with planning sessions with the associate/teachers, so that they had input in their roles and on the parameters of their classroom's participation in the project. Then we met with the students to outline the methodology of the project and what our goals were in having them participate in this important component of their language arts preservice program.

A SAMPLE JOURNAL ENTRY

I used the story *The Harmonica Man* by Hans Zander to identify M.'s oral reading comprehension and for a miscue analysis. On this day his disposition was not particularly positive or focused. There were obvious substitutions, such as "life" became "leaf" and "pet" became "pot." There were omissions of some words and reversals of words. During his reading, it seemed like he was reading phonetically—attempting to sound the alphabets' sounds. Having identified with the story of the little boy being fearful, also facing obstacles—"life sure is tough" and having no friends—M. asked a few times, "Who wrote this story?" It seems that M. made a personal connection with this story. I have generally found that M. is responsive with emotion to particular stories—usually laughing or he becomes somewhat quiet and serious.

In our continuation of reading Zander's *The Harmonica Man,* M. was calm, focused, gave effort, read in a whispering voice and very slowly.

It was incredible to see that he was actually reading! He could make out words like "music" and "doorways" and "dancing" all on his own after only 24 hours—a mere one-day success. The day before, M. was unable to read these words. However, on this second reading, he repeated the question, "Who wrote this story?" Once again, he identified closely with this story and thought that possibly I wrote it about him.

After reading *The Harmonica Man,* we turned to *Over the Mountain* and he selected to read the repetitive, rhythmic stories such as "One Sail and Me," by Emilie Warren McLeod and his favourite, "There's a Party at Mona's Tonight" by Harry Allard. We took turns reading the paragraphs.

Also significant about this session was M.'s discussion, once again, about trains and switches, and to my surprise, he was aware of a news story (probably through TV) about a train crash and its casualties in South Africa, as he happened to bring it up.

This remedial session was our last. *Benjamin Bigfoot* by Mary Serfozo was a cute and humorous "primary" text with excellent illustrations. At this session the reversal of words/letters stood out; familiar words he could read; and he read slowly and quietly. At this session, it seemed fair to conclude that there is no question the visual stigmatism intervenes with his literacy attainment. Also at this session, he expressed the eagerness to continue to write the train story on the library computer—time did not permit.

In assessing the reading frames that are best suitable for a sensitive and learning disabled child such as M., the individual conference is ideal. M. needs the positive reinforcement, the attention, the monitoring, and the extended dialogue for therapeutic purposes. Over the months, the repeated practice of reading significant texts has resulted in progress for M.

Already M.'s school has published an interview with him in a school newspaper to boost his self-image.

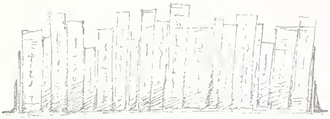
— Student Teacher

With the mentoring support of their associate/teacher, each student teacher was responsible for assisting a student-at-risk in literacy throughout their year in the teacher education program. Together, associate/teacher and the student teacher designed a program that could be implemented and revised as necessary, with each student teacher conducting a literacy tutorial with a student once a week, more frequently if possible, considering the intense and demanding other components of the teacher education program. And because we began during the first week of classes, the student teachers expressed concern that they would lack experience and knowledge to offer the child the necessary support. However, most of them had acquired the prerequisite school experience in the years before entering their preservice program, and were familiar with classrooms and with working with small groups of children.

We tailored the program requirements accordingly, beginning with introductory sessions where the partners would get to know each other, then moving to sharing picture books that had been carefully selected to suit the interests and needs of each student. The lectures and workshops that the student teachers attended began to add support to their efforts, and this was strengthened by their feedback sessions with their associates, and by their professional readings.

As the year progressed with their tutorials, the student teachers' repertoire of techniques and strategies grew exponentially. They developed interest inventories, conducted modified miscue analyses, tape-recorded reading

What stays with me are their compassionate understandings of the difficulties some children have in becoming literate, how life forces sometimes work against youngsters in their struggles in education, and of how much there is to do with these boys and girls who fall between the cracks of overcrowded classrooms with such limited resources.



sessions, created patterned books, and scribed stories. They built word games, found other assessment tools, read aloud dialogue stories with the children, encouraged visual arts responses to the texts, and observed their young buddies in various classroom situations. They accompanied them on school excursions, conferred with the students' parents, and some even visited their homes.

During the few first weeks, I would walk around the halls of the school during our tutorial times, and see adult and child partners seated anywhere there was space, their voices echoing through the school as 60 picture books came to life. Over the next few months, the classrooms began to accommodate the sessions, both with space and program design, as associate teachers and student teachers melded their activities and found new ways to support these developing readers and writers.

REMEMBERING THE EXPERIENCES

I want to draw attention to the journals in which the student teachers kept their plans, their observations, their reflections, their frustrations with themselves and with the inadequacies of the support systems, book suggestions and samples of the children's work. They were amazing portfolios, and there wasn't one that I wouldn't consider professional. I feel their quality grew from the relationship that developed between child and tutor, between a student who needed help and a student teacher who wanted to learn how to offer that help. In our sharing and feedback sessions, student teachers added to their knowledge base about literacy, about how children learn, and about how schools function (or could function).

As the year progressed, the observations and comments in the student teachers' journals became more informed, more detailed and specific, as their entries reflected their learnings from their course work and their teaching experiences, supported by their professional reading. In rereading many of them in preparation for writing this article, I am again impressed by what so many of them achieved with their young charges during this busy and complex year. Their analyses and reflections indicate great potential for these beginning teachers, but what stays with me are their compassionate understandings of the difficulties some children have in becoming literate, how life forces sometimes work against youngsters in their struggles in education, and of how much there is to do with these boys and girls who fall between the cracks of overcrowded classrooms with such limited resources.

To prepare student teachers for a life inside schools requires intensive and extensive relationships with the children and the teachers working in schools, the building of honest and mutually-beneficial partnerships with all of those involved in learning how "the place called school" can do a better job of educating our young people. These youngsters taught all of those of us involved about the journey towards literacy, and I am grateful that the student teachers took part so wholeheartedly in this time-consuming, but so significant, project.

ASSISTING A STUDENT-AT-RISK IN LITERACY

- develop interest inventories
- conduct modified miscue analyses
- tape record reading sessions
- create patterned books
- scribe stories
- build word games
- read aloud dialogue stories
- encourage visual arts responses to the texts
- observe their young buddies in various classroom situations
- accompany them on school excursions
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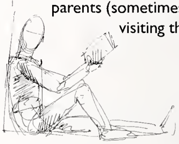

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DAVID BOOTH is professor emeritus in the Curriculum, Teaching and Learning Department at OISE/UT. He is well known as an international speaker, having worked with teachers and administrators throughout Canada, the United States, Great Britain, Australia and Asia. He is the author of dozens of books for teachers and parents and is an award-winning writer of picture books for children.

NARROWING THE GAP
Through Project REACH

Avis E. Glaze

Improving student achievement is the primary focus of the Kawartha Pine Ridge District School Board. In an effort to facilitate improvement in all schools, the board provides additional resources and increased professional development for staff. However, in February 2003, we identified 17 schools that had demonstrated a lack of improvement over time. For us, these schools were in dire need of increased support and intervention. Entitled Project REACH, the principals of the schools involved in this initiative were asked to meet once per month with the senior administrative team to identify the supports they needed, to discuss best practices to improve student achievement, and to promote collegiality and professional dialogue.

Whereas all our schools improved in five of six areas tested by the province (conducted by Ontario's Educational and Quality and Accountability Office [EQAO]), the most significant improvements were made in Project REACH schools and also with our students with special needs.

Results in Brief

As a group, during its first year, Project REACH schools showed improvement that was statistically greater than the board as a whole. These schools had an average of:

- 13% more students achieving levels 3 and 4 in Grade 3 reading compared to the 2002 results
- 9% more students achieving levels 3 and 4 in Grade 3 writing
- 14% improvement in mathematics

At the same time, Project REACH schools demonstrated a 7% increase in the number of students receiving special education support and a 2% decrease in the number of student who were wholly exempt from writing the test. This means that, rather than preventing students who had the lowest levels of achievement from writing the test, more of them were given an opportunity to participate.

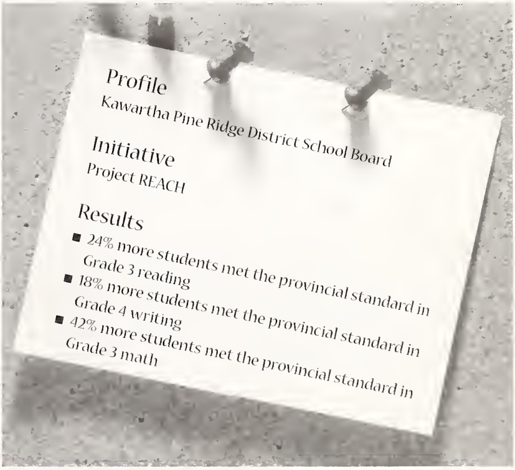
In the second year of the project, on average:

- 24% more students met the provincial standard in Grade 3 reading
- 18% more students met the provincial standard in Grade 4 writing
- 42% more students met the provincial standard in Grade 3 math

As a school district, one thing that has become clear to all of us is that fairness does not mean that everyone must be treated the same. Instead, it means that resources must be allocated based on need and that in order to be fair some individuals or schools must be treated differently. Need was therefore an important criteria in the allocation of scarce resources.

Initiatives and Supports

- Schools received additional special education teacher and educational assistant support as well as central assistance and training from a reading specialist.
- Each school developed improvement plans according to its individual needs and met monthly with senior administration to



Profile
Kawartha Pine Ridge District School Board

Initiative
Project REACH

Results

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- 42% more students met the provincial standard in Grade 3 math

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- share best practices, monitor progress, and identify future needs. Success was measured with the Grade 3 reading and writing EQAO results.
- Principals identified some of the following as school-based approaches leading to improved student achievement in literacy: an emphasis on professional development to increase teacher efficacy; provision of staffing and resource supports; increased use of running records, guided reading, book studies after school, and assessment strategies; and training parent volunteers.

Improving student achievement requires intentionality, perseverance, skill, and will. When we began seeing results, the real challenge was in sustaining those results. As a school district, we were extremely grateful to our teachers, principals, support staff, and parents who shared the responsibility for improvement in student achievement. As well, our community responded to our call for assistance through the SEEDS volunteer recruitment program in which members spend time in schools assisting students with reading and other subjects.

Project REACH has now expanded to 30 schools and we continue to see dramatic results. At the district level, capacity is built internally and there is increased sharing among schools. It was our hope, with our strong emphasis on community engagement and parental participation, that our community would judge us on the demonstration of continuous improvement in student achievement each year and on how well we met the needs of the students. Kawartha Pine Ridge District School Board continues to demonstrate its strong results orientation in all schools, but particularly in its Project REACH schools.

AVIS E. GLAZE is the Chief Student Achievement Officer of Ontario, and CEO, The Literacy and Numeracy Secretariat. Avis iniatiated Project REACH in her former position as the director of the Kawartha Pine Ridge District School Board. Professor John Ross at OISE/UT continues to lead the Project REACH research project.

PROJECT REACH PRINCIPAL SAYS...

"Increased staffing has allowed us to provide higher accountability for our students and there is reduced frustration for both students and staff as student needs are being met more easily and quickly. The additional human resources at the school bring a wealth of professional experience to help us reach all of our students. Most significantly, however, Project REACH has created an atmosphere of success, collegiality, and well-being among all of our school partners. We can see that we are really making a difference for our kids and the kids feel successful. It is a thrill to be a part of it!"

Martin Twiss, Principal
Havelock & Belmont Public School

"At Queen Mary, our mission is to provide each student with an education of the highest quality in a positive environment with caring, dedicated, and effective staff. Project REACH has enabled us to better implement our mission statement and put our beliefs into action. The resources and support provided by Project REACH allow all students to get what they need to succeed at school."

Maureen Running, Principal
Queen Mary Public School

"The focus on programming for the students, the provision of additional resources, and opportunities for administrators to meet on a monthly basis to exchange ideas were all valuable components of Project REACH. At our school, the staff reviewed the EQAO tests and how well the students were prepared for the tests. We made the decision to make the EQAO tests a school-wide focus, not just the focus for Grades 3 and 6. Children are being tested on the work up to and including Grades 3 and 6. As a staff we developed a plan of initiatives for the classroom and for professional development to better prepare our children and ourselves to improve academic achievement in our school."

Michele Adams, Principal
Stockdale Elementary School

"Project REACH provided us with an opportunity to address the literacy challenge facing our school community. The resources enabled the staff to become more effective in what they were doing. The reaffirmation of the fact that we had several students that required a slightly different and more intensive approach to reading instruction led me to focus on improving instructional practices within the context of the entire school. Becoming involved in Project REACH focused staff and parents on the importance of developing a comprehensive School Improvement Plan and working as a TEAM. All the pieces of the puzzle were now on the table."

Fred Mandryk, Principal
John M. James Public School

Students from Nelson Mandela Park Public School in Toronto

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OISE is known for research and international leadership in all areas of education. From partnering with Nelson Mandela Park Public School in Toronto's inner-city, to collaborating with the Aga Khan University in Pakistan, to evaluating England's elementary school literacy and numeracy initiative, OISE works with communities to create meaningful change. It's another way that OISE has an impact on the important issues in education, here and around the globe. To learn more, visit www.oise.utoronto.ca.

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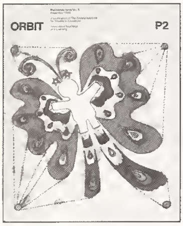

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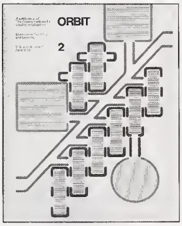

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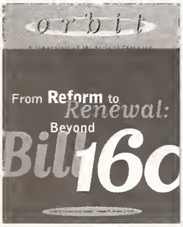

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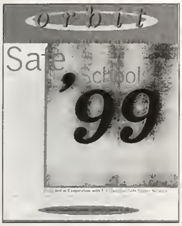

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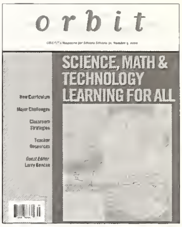

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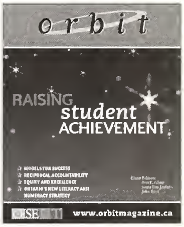


Hall-Dennis and the Teaching Profession

D. Myers

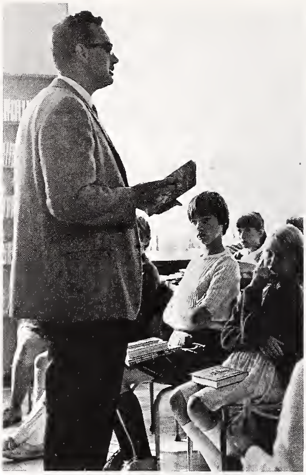
Department of History and Philosophy, OISE

Not since the massive and comprehensive Hope Royal Commission on Education in the late 1940s has Ontario seen such a flurry of educational investigations and reports as in the past few years. The Hall-Dennis report has been perhaps the most important and certainly the most stimulating of these recent efforts. In view, however, of the ineffectiveness of previous official reports in bringing about educational change–the Hope Commission was a classic example of this–it is time to assess soberly the chances of Hall-Dennis really affecting what goes on in our schools.

Two main factors suggest that the report may have a direct impact on Ontario education. First there is the style and nature of the document itself. In *Living and Learning* the only certainties are uncertainty and change, and the committee responds to this situation from a strong progressivist stance. The child, and to a large extent the teacher, capture the center of the stage, with the subjects, the administrators, and the experts relegated to supporting roles. Rather than laying down a blueprint for the educational system, Hall-Dennis sets out a number of alternative policy suggestions with the aim of creating an educational environment that will enable students to contribute to, and participate in, whatever sort of world they may encounter.

The second factor that should increase the chances of the effectiveness of Hall-Dennis is the emphasis the report places on the education and role of the teacher, and the radical nature of its recommendations on these matters. I contend that, despite the lip-service constantly paid to the importance and value of the teacher, in reality he or she occupies a lowly position in the educational hierarchy. The teacher is more often a mere functionary than a creative participant in the design and operation of the educational system.

To describe the teacher's position thus is to risk being identified with those who believe that teachers, generally and inherently, are a dreary and recalcitrant lot of second-raters, incapable of coping with a more challenging role. On the contrary, it seems to me that, even after acknowledging the superb jobs that a large number of teachers manage to do in unfavorable conditions, a vast and largely untapped potential of creativity and imagination exists among them. Not surprisingly, however, teachers, like other occupational groups, tend to reflect their environment in their attitudes and behavior. In the case of education this environment encourages a character and style that is narrow, passive, and conservative rather than broad, creative, and experimental, despite the fact that such a character and style is increasingly inappropriate to the tasks teachers and schools are expected to perform. Of late, there has been much talk of children as the 'victims' of our schools and our society. The description in many ways is apt, but teachers, too, seem to me to be 'victims'—maintaining and defending, under attack from all sides, a system they had little part in shaping and almost no opportunity or encouragement to evaluate critically.

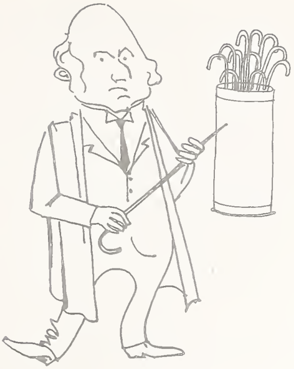

Ontario Department of Education

Toronto Board of Education

A peculiar combination of historical and sociological factors, buttressed by patterns of teacher education and the traditional organization of the schools, has created the teacher's plight. From time to time in the past, teachers have attempted, with disheartening results, to play a larger role and exert an influence on matters of general educational policy. Modern teachers' organizations in this province date only from 1919 and, generally speaking, have followed protectionist rather than innovative policies.

Social status has always been of gnawing concern and a terrible dilemma for teachers. In modern times, the teacher's concern with social status has been further complicated by constant reference to something called 'professionalism.' 'Professionalism' seems to me to be one of the least definable concepts imaginable and, for teachers particularly, one of the most inhibiting in their struggle to come to grips with their position and role. Possibly 'professionalism' is something more than a combination of very high pay, a very powerful monopolistic union shop, and a very articulate ability to describe an occupation in terms of the loftiest motives and purest intentions. In any case, teachers have long pursued this intangible grail with too little regard for the realities of their own particular situation and the policies and tactics necessary to improve their occupational conditions.

One might suppose that teacher-training institutions would devote a good deal of their time to examining and countering the historical and sociological influences that exert an inhibiting, restrictive influence on their inmates. In fact, however, they have done and are still doing too little by way of amelioration. Despite some notable changes and improvements in particular colleges, the impression remains that, for the vast majority of teachers now in the schools, their training was a dreary experience conducted in institutions which had not yet managed to shake off an atmosphere of petty oppressiveness and a deadening 'teacher-as-a-servant-of-the-public' mentality.



'The teacher, as a professional, should be aware of the instruments and means at his disposal to whet intellectual appetites.'
(Living and Learning, p. 57*)*

Finally, in this whole picture of demoralization and insecurity, there is the school system as presently organized. The classes are too big and the beginning teacher often gets the problem ones, making discipline (that is, survival) difficult. Though confronted by the myriad distractions of unfamiliar and often irrelevant detail, the teacher must still cope with the central fundamental problems of teaching–how to interest, encourage, challenge, and know the students. Even when, after two or three years' experience, he is able to deal easily with all the externals of the job, he finds few opportunities and even fewer prizes for raising fundamental issues concerning education and the educational system. The teacher who tries to organize worthwhile study and discussion soon finds himself regarded as eccentric, fanatic, or troublesome. Altogether, then, a complex combination of historical tradition and social background, reinforced rather than countered by teacher-training institutions and induction practices, militates against the staffing of our schools by independent, critical, and creative people.

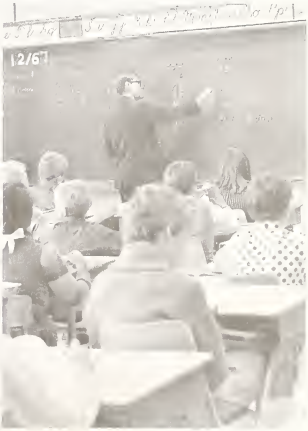
Photos : Ontario Department of Education

Although it makes constant use of the iniquitous term 'professional' and rather soft-pedals the fact that good teachers will cost good money, Hall-Dennis does solidly support the improvement of teacher education and argues strongly and cogently for making the teacher's role in the system central in fact as well as in theory. In terms of teacher education, the report contends that this function should be performed by universities, mostly through faculties of education. The recommendation envisages a four-year program in which the personal advanced education of the teacher, with particular orientation to the broad issues of education, is combined with the development of teaching skills. With a further view to facilitating the continuing professional development of teachers, the report recommends that formal provision for their participation in seminars, part-time courses, and sabbatical study receive high priority.

In support of its philosophy that a large measure of teacher autonomy is essential to establishing modern curricula, the committee proposes a violent shake-up of the educational bureaucracy, designed to move teachers 'from the fringe to the heart of professional decision making.' On a wider basis, the committee proposes that self-government be granted to teachers through a body to be called the College of Teachers of Ontario that would have the power to license and discipline its members.

In its treatment of the education and role of the teacher, then, Hall-Dennis appears singularly perceptive and constructive. Thought should be given, however, as to when we can reasonably expect the appearance of solid evidence of implementation of the Hall-Dennis recommendations. The appearance of *Living and Learning* in 1968 delayed, until March 1969, agreement between the Department of Education and the Committee of University Presidents on general principles and guidelines for teacher-education programs at the universities. Presumably, the channels are now open for negotiation between individual universities and the Department. If the chance is lost to examine, in a fundamental way, the complex question of what kind of education and training make the best sense for teachers in both our elementary and secondary schools, then all the 'new' teacher-education programs should be scrapped. Empty indeed would be reforms that serve only to equip all elementary as well as secondary school teachers with a B.A. degree.

There is, of course, much to be criticized in Hall-Dennis, but if teachers fail to recognize the report as the most radical charter of its kind ever to appear in this province, they will be making a grievous error. *Living and Learning*, by its proposal for a central role for teachers in formulating and implementing educational policy, has presented the challenge : it is up to the teachers of Ontario to rise to it.



WHY MEN TEACH IN PUBLIC SCHOOLS

An analysis of the responses of members of the Ontario Public School Men Teachers' Federation to certain items on a survey

Dormer Ellis and J. Rosaire Cloutier
Office of Field Development, OISE

If you want to find out why men become elementary school teachers, just ask them. This is essentially what we have done. If you are one of the ten thousand members of the Ontario Public School Men Teachers' Federation (OPSMTF), we asked *you.* And we asked you a great many other questions as well – such as your age, your present position, how long you have been in the teaching profession, and what other types of work you have done. We asked about your academic and professional qualifications at the time you entered the profession, the courses you have taken since then, and your present academic and professional status. Besides all these things, we wanted to know if your attitude towards teaching as a profession for men has changed during your own career, and how.

These questions were part of a survey conducted last spring by OPSMTF in cooperation with OISE's Office of Field Development. Its official title is the 'Ontario Public School Men Teachers' Federation Background and Opinions Survey,' and it is without doubt the largest and most comprehensive study of the members of a teachers' federation ever conducted in Ontario. It is a 'population' rather than a 'sample' survey. This means that the questionnaire – five pages in all – was sent to every one of the Federation's members. Within a few weeks, more than seventy percent of the questionnaires had been completed and mailed back. This return is unusually high and surely indicates the considerable interest men teaching in elementary schools take in their work.

To date there has been very little educational research on Ontario's teachers or teachers-in-training. The only large-scale study that has been completed forms part of the Atkinson Study of Utilization of Student Resources, a long-term study of all the students who completed Grade 13 in 1955/56.

The OPSMTF survey is a cross-sectional rather than a long-term study. It does not identify a group of entrants to the teaching profession and follow just that group for a period of years. Instead, it seeks to describe all members of the profession at a specific time – in this case, May 1969. It is no exaggeration to say that the OPSMTF study is a very large research project. Later there will be a major research report produced jointly by OISE and OPSMTF; in the meantime we will be publishing shorter, more informal articles in teachers' magazines and educational journals, such as the article here, which touches on just a small aspect of the whole project.

The study grew out of the Federation's need for factual information about its membership so that it could genuinely represent the interests of the men who comprise it. Garth McMillan, assistant secretary of OPSMTF, and H.W. Stevenson, chairman of the OPSMTF Educational Studies Committee, were largely responsible for getting the project under way. The actual design of the questionnaire was very much a team effort, with various drafts going back and forth between the professional researchers at OISE and the members of the OPSMTF Educational Studies Committee.

The resulting questionnaire included a list of factors thought likely to be of importance to men at the time they entered the teaching profession. Respondents were asked to rate each factor on a five-point scale ranging from 'unimportant' to 'very important,' but because other factors were likely to be influential in individual cases, they were asked to elaborate on any other factors that were important to them at the time they entered teaching. Nineteen percent, or over thirteen hundred, wrote in some comment. These comments have been read, classified, and related to other items on the questionnaire.

During the course of this part of the analysis, we were struck by the apparent relationship between the reason for choosing teaching as a profession and when the respondent began his career. For example, the men who are now approaching retirement age attended normal school in the depression years of the 1930s. The chief reason they gave for going into teaching was their desperate desire to have a steady job. Obtaining a secure position at a regular salary – even the very low salaries of four or five hundred dollars a year mentioned by some of these respondents – was a cherished goal. Among the 648 men who had been teaching for more than thirty years, very few mentioned the nature of the work as having attracted them into the profession. Rather they stressed their need for occupational security. Here are some typical reasons:

'It was depression times. We had lost the family farm. My parents sacrificed the last of their savings to send me to normal school.'

'With the prospect of fifty dollars a month – every month – why it sounded like pure heaven!'

'Young fellows have no idea how envious people were of teachers in those days. If you could keep your family off relief, you were doing just great!'

How very different are the reasons given by the men who entered the profession in the late 1940s, just after the Second World War. They tended to regard teaching as a social service and to consider themselves as making a personal sacrifice in order to improve the world:

'I had seen enough of destruction and death. I wanted to preserve the innocence of children and to help them build a better future.'

'I firmly believed that as a teacher I could help to build a better Canada.'

And a final example of this kind of reason for becoming a teacher...

'I wanted a life work that was worthwhile. It was important to me to do my part

towards seeing that the next generation wouldn't have to endure the hell that we did in a prisoner-of-war camp.'

Some of the men in this age group seemed a little embarrassed at having admitted to the idealism and commitment they felt when they entered the profession, and they concluded with such comments as 'Boy ! Wasn't I naïve in those days ?' or 'I know it sounds square now, but in 1946 it didn't !'

By far the largest number of responses to the open-ended question about reasons for choosing teaching as a career came from men who had been prevented from entering the occupation they really wanted. Because about forty percent of the responses fell into this category, we subdivided them into academic obstructions and financial obstructions to entering another profession.

Academic obstructions were found among respondents of all age groups but were especially prevalent among those who had entered teaching within the last ten years. This is not unexpected because, as is well known, the competition to gain university admission has become increasingly severe. Classified as academic obstructions resulting in enrollment in a teacher-training course were such reasons as these :
'The guidance counselor advised me to go to teachers' college. We both knew I would never make Grade 13.'
'I flunked out of first year engineering and they wouldn't let me repeat.'
'Actually, I had intended to be a dentist but I only got five of my Grade 13 papers.'
'With an average of only fifty-five percent, the university wouldn't take me.'
'Most of my friends went to university, but my marks were too low so I had to go to teachers' college.'

However, many who volunteered the information that they had become teachers because they couldn't get into the profession of their choice went on to say that they did, in fact, enjoy their present work in the schools.

Financial obstructions to full-time university studies were reported by men of all ages. Nevertheless, those who began teaching in the 1960s mentioned these less frequently. Perhaps the increased availability of scholarships, bursaries, and government loans for university students is responsible for this decline. However, the problem has not vanished. These men generally had the necessary academic requirements to become university students but for one reason or another could not afford to devote three or four more years to full-time study before beginning to earn a living. Their reasons differ in detail but are similar in principle. For example :
'When my father died during my Grade 12 year, my plans to go in for science were effectively wiped out.'
'I was the eldest of five. It wouldn't have been fair to the others for me to stay in school much longer.'
'I didn't want to postpone marriage for another three years while I earned a B.A. so I decided to get it on a part-time basis while teaching.'

In some cases, the comment suggested a cause-and-effect relationship between financial and academic obstructions.

'I ran out of money in my second year at university and tried to make ends meet by working evenings and Saturdays in a bowling alley. I missed my year.'

Apparently, it was the relatively short period of training for which no fees were charged coupled with the opportunity to proceed towards a degree through evening and summer courses, rather than the nature of the work itself, that attracted these men to elementary school teaching. This led us to wonder what happens when such men attain degree standing through extramural studies. Do they then leave the teaching profession and take up other work ?

Apparently not. Among those who claimed that financial obstructions to full-time university studies led them to enroll in teachers' college we found many who had since completed one – or even two – degrees. It should be noted, however, that the OPSMTF survey included only active members of the Federation and not those who had left it. It cannot tell us whether men are more likely to leave the teaching profession for some other line of work once they have earned a university degree. Fortunately, the Atkinson Study, mentioned earlier, throws some light on what happens when the men whose entrance to teaching was precipitated by their inability to finance full-time university studies have accumulated a sufficient number of extramural courses to earn a B.A. The male student-teachers of 1955/56 showed a very high dropout rate during the first two or three years and a very low dropout rate after that. With few exceptions, the men who left the teaching profession had the lowest secondary school marks and the poorest records at teachers' college. There was no attrition among those who had high academic qualifications except for a half dozen who either decided to take their final year of university on a full-time basis or moved into secondary school teaching after receiving their B.A. While this group of men were no longer members of OPSMTF, they were not of course lost to the teaching profession as a whole.

In view of the large number in our survey who indicated that they went into teaching because financial or academic obstructions prevented them from entering another profession, it is possible there will be a decline in enrollments in teachers' colleges if the Hall-Dennis recommendation requiring a university degree or en-

rollment in a degree program of all teachers by 1972 is implemented.

But let us return to some of the other factors that attracted the members of OPSMTF to elementary school teaching. Some were impressed by the portability of the teaching certificate. The fact that they could move from a rural area to a city or from one Ontario town to another was seen as a real advantage. For example:
'I didn't want to work in the mines and stay forever within a few miles of the place where I was born. As a teacher, I would be free to move around.'

Occasionally, the challenge and adventure of teaching in the far north or the possibility of teaching overseas on an exchange basis was mentioned.

Some other respondents viewed the teaching certificate not as a passport to geographical mobility but as just the reverse – a means of ensuring that they would not have to leave their home community. Consider these comments:
'Dad's farm just wasn't big enough for my brothers and me, so I became a teacher and lived at home while teaching in the same school where we had once been pupils.'
'I love the north and I didn't want to leave, but there wasn't much work if you were on the slight side and didn't look too strong. Teaching seemed the obvious solution so here I am!'

Among the respondents who expressed the greatest satisfaction with teaching as a career were those who said that they became elementary school teachers in order to make a hobby into a profession. As one man wrote:
'I knew I would enjoy teaching. I already had a cub pack, a Sunday School class, and a hockey team.'
And another . . .
'I never seriously considered any other type of work. I get a great deal of satisfaction out of teaching. Even in my so-called spare time I teach swimming to a group of retarded youngsters.'

Other respondents mentioned baseball teams, summer camping, and work with the Big Brothers' Association as interests that directed them into the teaching profession.

Several comments defied rational classification and so were put into that most useful of research categories, 'other.' According to one teacher:
'Believe it or not – I really thought teaching would be a nine-to-four job with weekends and summers free. As my main interest as a young man was centered on a dance band, teaching seemed an easy way to fill in the gaps in my band schedule.'

According to another:
'To be perfectly honest, I went to teachers' college because my girl friend was going there. I was so afraid she would meet someone else. As it turned out, I was the one who met someone else.'

Curiously enough, teaching does not seem to run in families. While about a fifth of the men in our survey had wives in the profession, few had other relatives in teaching, and almost forty percent had none at all – unless those who listed 'wife's second cousin' or 'grandmother's first husband' are taken into account.

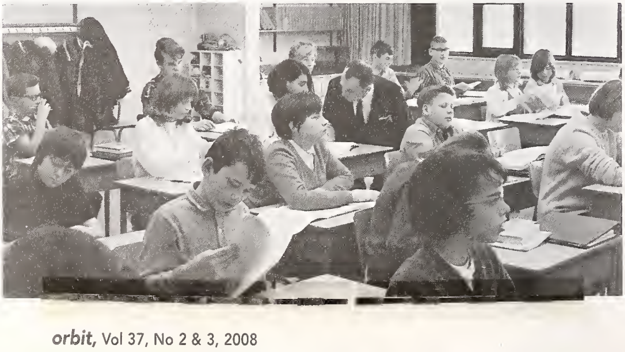
Teaching as a professional interest that can be shared by husband and wife was mentioned by only 29 of the married respondents, but those who commented tended to be enthusiastic:
'My girl friend (now my wife) and I decided to become teachers so that we could work together, share the same interests, have the same holiday periods, etc. Not many professions are so well suited to both sexes.'

Another teacher's pleasure in sharing came through in his response to an item on the questionnaire dealing with continuing education:
'While other young couples went bowling or played bridge, my wife and I attended evening classes at the university. We took summer courses together in lieu of long holidays. Now we both have our B.A.s. I am proud to say that my wife is a vice-principal and I have just been promoted to principal. People tell us we are "lucky."'

And yet another observed:
'With us, teaching is a family affair. Because my wife and I both enjoyed teaching so much, it was just natural for our three daughters to become teachers.'

There is a wealth of information still to be gleaned from the thousands of questionnaires completed by members of the Federation. When the analysis of the survey is finally complete, we will have a good idea not only of what has attracted men to elementary school teaching but of why those in this profession are satisfied or dissatisfied with it, how they feel about extramural courses, how many have obtained a university degree extramurally, how long it has taken them to complete it, and how all this relates to their previous academic standing and to other personal, family, and social factors.

These findings should have many applications. Foremost, perhaps, is their value to OPSMTF in indicating the views, aspirations, and desires of its membership. Many other groups and individuals will also find them of value – from similarly constituted teachers' federations to administrators, educators at the post-secondary school level, and guidance counselors concerned with predicting their students' chance of success in the demanding and challenging field of elementary school education.



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Moral Education in Ontario Schools

Moral education is going on in our schools, whether we like it or not. And an increasing number of teachers and students are asking that it be encouraged – even to the point where courses devoted to the discussion of moral issues are included in the school curriculum.

The word 'moral,' here, is to be interpreted broadly. It is popularly associated with the use, abuse, or non-use of sex, alcohol, drugs, and the like. In the 'hidden curriculum' of many teachers, it is tied to punctuality, neatness, docility, and conscientiousness in schoolwork. But many of those who are pressing for moral education in the schools obviously have in mind the discussion of a wide range of issues, including parent-child relationships, civil disobedience, business ethics, the moral status of war, mercy killing, inequalities in society, crime and punishment, and 'quality of life.'

General approval has not yet been given in Ontario to offering an entire course in morals, even as a one-year option at the senior high school level. In this respect, the study of morals is trailing behind the study of world religions, which now has government approval as a course. There are two main reasons for this. First, the introduction of an optional course in world religions at the senior high school level was a highly visible recommendation of the Mackay Report that the government could rather easily implement. Second, it is generally believed that a historico-cultural-comparative study of world religions such as the one proposed would be relatively uncontroversial.

In the long run, however, it is probable that the study of morals will prove to be less controversial than the study of religion. On the one hand, many people contend that a historico-cultural-comparative study of religion will destroy the religious faith of the young; on the other, many will no longer tolerate systematic instruction in particular religious dogmas. Further, the demand for the study of values in the schools – and at all educational levels – is already great and will likely continue to increase rapidly, while the study of religion, particularly in the lower grades, is in general less feasible.

Another reason for *relative* optimism regarding the future of teaching morals or ethics in schools is the large amount of systematic, mutually supporting research into moral education that is taking place in different parts of the world. In continental Europe, for example, courses in ethics have been offered in high schools for many years. This may be seen as large-scale classroom experimentation from which we may benefit. Jean Piaget in Geneva has also made many valuable contributions to our knowledge of the moral development of children. In Great Britain, two major moral education projects (supported by the Farmington Trust and Schools Council respectively) and a number of smaller ones have been operating for the past three or four years. And in the United States, Lawrence Kohlberg has been doing extensive research into moral development since the mid-fifties, and in the past three or four years at Harvard he has turned his attention more specifically to problems of moral education. In Canada, there are small projects under way in Vancouver and Calgary. Farther east, there is considerable theoretical interest at Althouse College in London, and two major projects have been initiated at OISE in Toronto, one in moral education and the other on Canadian public issues, which touches on a number of moral issues.

A further source of encouragement is that a connected body of literature on moral education is developing. Apart from Piaget's classic work *The Moral Judgment of the Child* (Routledge & Kegan Paul, 1932), there are more recent publications such as Peck and Havighurst's *The Psychology of Character Development* (Wiley, 1962), the Farmington Trust Project's *Introduction to Moral Education* (Penguin, 1967), a collection edited by Theodore and Nancy Sizer, *Moral Education: Five Lectures* (Harvard University Press, 1970), and John Wilson's *Education in Religion and the Emotions* (Heinemann, 1971). A publication resulting from a recent OISE conference is *Moral Education: Interdisciplinary Approaches* (University of Toronto Press,1971). It includes papers by the psychologists Lawrence Kohlberg, Justin Aronfreed, and David Ausubel, the philosophers, Kurt Baier and David Gauthier, and a curriculum theorist, Don Oliver, who is a specialist in social studies teaching. The papers in this book were used extensively by the Mackay Committee in preparing its report, and the book has been well received by teachers doing summer school work at OISE. In addition, a teacher handbook called *Moral Education in the Schools: Some Practical Suggestions* was published by OISE last month, and Professor Eisenberg, Director of the Canadian Public Issues Project, is currently preparing a similar handbook in his area. Both of these handbooks have arisen from research in Ontario classrooms.

From the point of view of research and research literature, then, the stage is set for the introduction of programs in ethics in Ontario schools. Work has yet to be done, but we must not be too hesitant. If students, teachers, parents, and school boards see the need, a program in moral education, at least on a trial basis, is surely justified.

Just what is possible within present Department of Education guidelines? The answer is, a surprising amount. Although courses concerned *entirely* with ethics are normally excluded, the Department has made it clear again and again that the discussion of values within the context of other school subjects is legitimate. Indeed, a course in economics was recently returned for revision because it did not give sufficient attention to such questions. Obviously the same outlook must apply to courses in such fields as guidance, man and society, and health.

Within any group of schools, elementary or secondary, a coordinated, interdepartmental program in values could be implemented. If the study of values were 'organically fused' with the current activities of existing departments, a number of obstacles, including the addition of 'yet another subject' to the school curriculum, would be overcome.

A good way of setting up such a program in a particular school board area would be to form a committee of consultants, teachers, and students from both elementary and secondary school levels. This committee could provide general guidance and coordinate work at the two levels. It could enunciate the principles and concepts of the program and draw up a list of topics with suggestions concerning sequence and pacing. It could also supervise the related inservice training of teachers and assess the overall success of the program.

The allocation of topics to departments and by age level, the involvement of particular teachers, and the detailed assessment of the program could be taken care of by a committee set up within each school.

As is suggested by the foregoing, one of the first steps in planning a program in moral education should be to identify the topics to be dealt with and the ages at which they can best be studied. Almost inevitably, certain topics will appear several times for use with different age groups, but because of the changing nature and depth of the approach as the child becomes more mature, repetition should not result. A representative sampling of topics follows.

A. *Personal and Social Values in General* (ages 5 to 9)
Helping other people
The self and others
Making up one's mind
Valuable goals in life

B. *Human Relations* (ages 10 or 11)
The individual's need for other people
Different values and rules in our society
Loyalty and patriotism
The place of the inner group of relatives and friends
Prejudice against races, social classes, and other groups

C. *Decision Making* (ages 12 or 13)
Personal moral values
Dependence/independence
A working understanding of the world
Worthwhile personal goals to pursue in life

D. *Human Issues in the World Today* (ages 14 or 15)
Freedom and equality in the world today
Means to ends: national and international law
Underdeveloped nations (so-called)
Civil liberties, e.g., in commerce, speech, alcohol, drugs, marriage, and divorce
Social work

E. *Value Theory* (ages 16, 17, or 18)
What is morality? Moral and non-moral values
Moral psychology – human needs and moral ideals
Values in today's world – 'quality of life'
Value theories – developing a value theory
Deciding what to do – the place of beliefs and rules in decision making

Schools would vary in the number of teachers and in the departments or 'subject areas' given responsibility for dealing with values. Initially, involvement within a particular school should not be too extensive. There are two good reasons: first, the burden of inservice training – workshops, classroom demonstrations, and so on – would strain the school's resources; and second, the resulting situation would be little different from the present one, in which everyone is responsible but not much is being done.

Among the subject areas in which the study of values on an 'organic fusion' basis might be encouraged are family living, social studies, and guidance at the elementary level, and health and physical education, history, man and society, English, guidance, and home economics at the secondary level. Sometimes it is obvious which subject area is best suited for the consideration of particular moral issues, but often an arbitrary decision must be made. The rationale of such an interdepartmental program is not so much that moral issues should be assigned to their *proper* subject area as that they should be assigned to *some* subject area (teacher or department) in order to ensure relatively comprehensive coverage and the linking up of value concepts and principles with one another.

Actually, the 'organically fused' study of values should be going on extensively in Ontario already, as any examination of the stated aims of schools reveals. However, in a great many schools the serious discussion of value questions appears to take place so infrequently or in such a disconnected fashion that students are not developing an adequate body of value principles and attitudes. Some teachers, hampered by a lack of guidance and coordination, despair of dealing with such questions thoroughly enough and largely ignore them; others make an attempt, but find that their efforts are too isolated to have a cumulative effect. The students, discouraged by the difficulty of resolving moral issues, tend to either accept the values of persons in authority in a rather thoughtless way or adopt a relativistic view, taking the stance that values are 'just a matter of opinion' and do not require serious thought. It is essential, then, that teachers be given the guidance and coordination to achieve those broad goals of moral education that we have long agreed schools should achieve.

I expressed the view earlier that the study of moral issues could be carried out in a sufficiently noncontroversial way that its introduction into the Ontario school curriculum would be feasible. What is meant by 'noncontroversial' in this context? Surely that we must allow for differences of opinion in the classroom. Students must be able to express quite radical views on ethical matters and have them discussed with appropriate respect and thoroughness. Only in this way can an adequate sharing of concerns and ideas take place and a sufficient range of perspectives be brought to bear on the problems under discussion. But there are a few topics that many members of the public would not wish to have discussed at the lower elementary school level, and these would have to be restricted to appropriate age groups. Further, some extreme remarks by students – for example, 'Murder is often a good thing' – should not be allowed to pass without contrary argument. Then, too, while the teacher should feel free to express his own views, it would be unwise for him to promote them too aggressively. If these pitfalls are avoided, a stimulating and generally acceptable program of studies should emerge.

There is no fundamental objection, then, to a program of incidental or 'organically fused' moral learning similar to that recommended in the Mackay Report. Indeed, the time has come to be more positive about it. In the Province of Ontario, with a carefully formulated government report in our hands and a growing body of research literature and experience at our disposal, it is our *duty* to introduce into our schools a program of coordinated discussion of moral issues. It is a duty that we have to our students, to our society as a whole, and to other societies that at present lack such opportunities for progressive work in moral education.

SECTION ONE

CONFRONTING TOUGH ISSUES

Must Girl-Friendly Schools Be Girls-Only Schools?

Arguments Against Segregation Based on Sex

By HEATHER-JANE ROBERTSON

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There is a recurring fantasy shared among teachers that has to do with starting up a perfect school, a school created by like-minded colleagues in which less energy would be needed to accommodate tedious disputes about philosophy, endless administrivia, petty politics, and uncooperative students and co-workers. What teacher hasn't indulged in after-hours reveries with good friends about how, if they had their own school, they would avoid all the mistakes and show everyone just how great things could be?

Most of us appreciate this fantasy as a welcome indulgence, a chance to escape, temporarily, from the reality of the schools we have — good, bad, and indifferent. Mostly we dismiss our "just start over" dreams the same way we dismiss those occasional temptations to quit teaching altogether, leave our spouses, buy a new house instead of cleaning the kitchen, and a host of other dramatic solutions to irritating problems. We rarely follow up on simple solutions to complex problems, though, because we know they tend to lead to other problems, some of which may be worse than the ones we are trying to leave behind.

As you might have guessed, I am pursuing this tangent because I think it may have some bearing on how we think about the promises of single-sex schools to advance gender equity. I tend to think we're being selective about the issues and fuzzy about the consequences. I think that we're avoiding the tough issues and encouraging others to do the same.

And who is this "we"? The "we" is those of us who care passionately about the quality of girls' lives, who have devoted years to a frustratingly slow struggle towards gender equity, who have used research and reason and coercion, as required, to try to transform a system that, too often, has been intransigent if not hostile. *We have tried everything else.* We tell ourselves we deserve a "just start over" solution because all the other alternatives have proven inadequate, and we carry the bruises to prove it.

There is no question that there are thoughtful, cautious supporters of same-sex education for girls who are pursuing this option as a strategic rather than a reactive response to the problems they see and the solutions they envisage. However, it is also true that many supporters are much less perplexed by long-term and unintended consequences, and are ready to trade off future considerations to have their needs — or their daughters' needs — met *now*. If frustration is not by itself an adequate basis for school reform, we have to be as sure of the wisdom of our solutions as we are about the problems we are trying to solve.

The argument for "girls-only" schools — since I'm not aware of a similar movement promoting boys-only schools, it is somewhat disingenuous to use the more neutral expression "single-sex" — needs to be compelling to be supported. We have been cautious, and rightly so, of segregation based on immutable characteristics of race, sex, or disability. Modern democracies have been nervous about organizing their institutions on this basis; indeed, programs like employment equity — which identify individuals based on these characteristics — are promoted as tools of integration, making the workplace more diverse, not less diverse. Those of us who support these measures are nonetheless quick to object to measures or institutions that perpetuate "hegemonic homogeneity." It may be possible to be selectively in favour of segregation, but to be intellectually honest, I believe we have to admit that the means we are using to justify the end — an "improved" education for girls — is problematically in conflict with other principles of equity.

To justify such measures, their rationale must be extraordinarily sound; the ends — all of them, not just those that are intended — must justify the means. This burden of proof, as it were, must also be stated simply, unrefined and unqualified, for if single-sex schools are to reach beyond the daughters of our most elite citizens, their rationale will need to be popularized. For the sake of this discussion, then, let me summarize the lay version of the argument in support of girls-only schools:

> Girls-only schools respond to the widely-held belief, supported by some research, that mixed-sex schools provide a different and inferior quality of education for girls. This is caused in a general sense by patriarchy as manifested in schools, resulting in a male-centred curriculum, a competitive climate, and low tolerance for difference. As a result of their treatment by adults and boys in schools, girls' self-esteem drops, girls' voices are lost, they miss out on key career-related courses, and their future opportunities are restricted. The solution is to educate girls separately, responding simultaneously to issues of curriculum, climate, inter- and intrapersonal issues in girl-friendly ways informed by a feminist analysis of schools and society. Research concludes girls educated in this way are comparably accomplished and high-achieving.

Even this simplified description probably embellishes the argument as it is understood by the public or by most teachers; certainly it is beyond most students' powers of description. (I asked my 13-year-old daughter why people would want girls-only schools. "Because boys are beasts," she answered, grinning at her brother.) Still, I think it is not oversimplification — mine or my daughter's — that creates problems with this analysis, but its inherent weaknesses. While several parts of the rationale for all-girls' schools are problematic, let me comment on four specific issues.

The Matter of Self-Esteem

I begin with this issue, because it is telling that even those who have no exposure to the growing body of research on adolescent girls are quite sure that low self-esteem is a chronic problem among them. It is also generally believed that this is the key problem to which girls-only schools respond (Nelson, 1996). This perception has been encouraged by the media and it may well have caught on because of our enculturated redisposition to see females as inadequate, flawed, and in need of remediation. Elsewhere (Robertson, 1995b) I have argued that to the extent that girls suffer from low self-esteem — and this extent is exaggerated routinely — the "problem" is actually evidence of an acute eye for reality in which neither females nor youth are accorded much respect. Unless we deal with the biases evident in both sexes that differentially value that which is associated with males and females, individualized attempts to increase self-esteem merely teach girls to value themselves "despite" the fact they are female. Yet teaching girls to value themselves just "because" they are female is equally hollow and arguably chauvinistic.

At the same time, we need to revisit the whole notion of self-esteem. Kenway and Willis (1990), for example, suggest that what we are assessing when we measure self-esteem is merely the extent to which an individual has identified with male, western, middle-class individualistic values and that we might usefully ask whether, in fact, we want girls to have more of the same. Even taking conventional readings of the self-esteem issue, responding only along gender lines seems problematic. American black girls apparently score higher on self-esteem scales than most boys (Greenberg-Lake, 1990); many boys, especially those who do not fit stereotypically "masculine" roles, also report feelings of inadequacy (King & Coles, 1992). It is obvious that schools for students with low self-esteem would not be girls-only institutions.

> “We have been cautious, and rightly so, of segregation based on immutable characteristics of race, sex, or disability. Modern democracies have been nervous about organizing their institutions on this basis…”

The Question of Voice

Popularized by Gilligan (1982), "voice" has become a useful expression to refer to the individual's sense of opportunity and entitlement to express herself, and to have both her words and their meaning heard, understood, and respected. It is widely believed that conventional classrooms "silence" girls' voices and it is alleged that girls-only courses, classrooms, and, ultimately, girls-only schools encourage those voices and allow them to be heard. Certainly, it makes sense to assume that when groups are smaller, more homogeneous, and when the agenda belongs to participants and is dedicated to listening, the sense of being heard and understood is greater. This is the rationale for all kinds of self-help groups, from those for agoraphobics to the unemployed. Without question, they provide support out in "the real world" and offer opportunities to group members to develop the insight and confidence that are part of voice.

Yet in thinking about gender and voice, I have come to the conclusion that "expression" is less a problem than "reception." We have an obligation to ensure girls' voices are expressed and heard even in less sympathetic settings. I do most fervently want my daughter to find her voice and to express it clearly, but perhaps more importantly, my son must learn to listen and to hear. She must learn to take up her space, but he must learn to make room. She must learn how to assert, but he must learn not to aggress. How can he learn to yield the prerogatives of male "voice" if he is excluded from the conversation?

Lost Courses; Lost Opportunities

Again, conventional wisdom has it that girls avoid optional high school mathematics and science courses in droves, abandoning them either because they believe they are too hard or inappropriate subjects for girls to study. This gender gap has received a great deal of attention, fuelled by manufactured misapprehensions about Canadians' skills, the economy, and the gender gap itself (Barlow & Robertson, 1994; Robertson, 1992a). Data collected for *The Better Idea Book* (Robertson, 1992a) demonstrated that even four years ago, the gap had closed in terms of participation and girls' "success rates" were nearly identical to those of boys. It is primarily at the postsecondary level that girls choose not to pursue science-related careers, mostly because they find them less attractive than other career options, in part because they see them as inconsistent with their value systems and their focus on interpersonal relationships (Gilbert & Pomfret, 1991). Our preoccupation with "maths and sciences" — as women, teachers, and parents — may in fact be little more than an unconscious validation that those areas of inquiry and employment associated with males are innately superior (Robertson, 1992b). If we really value women, we will work to see women's "traditional" course and career choices valued as much as non-traditional choices.

> “Other gaps that are much greater and more politically volatile than gender are being overlooked. Class, not gender, is the more significant predictor of school success.”

I believe we are encouraged to see "gender gaps" as the most pressing education equity issue because the narrowing of that gap over the last 20 years has been accomplished without any threat at all to the power of our corporate and economic elites. Other gaps that are much greater and more politically volatile than gender are being overlooked. Class, not gender, is the more significant predictor of school success (Levin, 1995). Working-class students in Ontario are ten times as likely as their "professional class" peers to "choose" non-academic programs (Curtis, Livingstone, & Smaller, 1992). The poverty gap is growing, but should we support the creation of "poor-only" schools?

> “Our task is to transfer the practices that nurture girls to classrooms that nurture everyone.”

Tribalism and Schools

While the notion of extending girls-only schools beyond private institutions is not new, it is not merely coincidence that has resulted in their recent popularity. As Saul (1995) writes, we have adopted an ideology of corporatism that has us parsing ourselves into interest groups that seek more of what we believe others to have. We see nation-states split themselves over ancient but never-forgotten grievances; we see groups (like "angry white males") go to ludicrous lengths to establish "proof" of their disentitlements. The price is both genuine individualism and community. A seemingly contrary trend of "rugged individualism" dismisses all pre-existing conditions — including class, race, and gender — in favour of survival of the fittest and insists that "fair competition" is all that is required. Both trends are fostered by a marketplace ideology that measures democracy exclusively by the quantity of choices available to citizens/customers.

As transmitters of cultural and political values, schools are thus contested political terrain. To a significant degree, this ideological battle will be fought over the quasi-privatization of public education, most probably over Charter schools. Charter schools are designed to serve a "niche" market — the musically talented, the academically gifted, the computer-inclined, girls. By ensuring that the children who attend them are more like each other than like "other" children, Charter schools validate elitism and tribalism (Robertson, 1995a). Because they are designed to operate on free-market principles, Charter schools compete with each other for certain kinds of students — able, high-achieving and easy-to-teach — and create a group of "undesirables" who have no niche except the weakened public schools their more "fortunate" peers and their parents have abandoned. They are promoted by the interest groups that serve our elites, from the C. D. Howe and the Fraser Institutes to the *Globe and Mail*. Their supporters often cite girls-only schools as evidence that Charter schools can serve progressive as well as elitist goals. I believe that in a well-intended effort to better meet the needs of girls, many of us are being duped by the notion that somehow all-girls schools are different, disconnected from the broader political context, posing no threat to the equality goals of public education. We gloss over how they serve corporatism and competitive individualism. We are so tempted by the promise of the "just start over" solution, so seduced by our good intentions, that we believe because we say no harm will be caused, none will occur.

It is difficult to pass up these "just start over" dreams that, superficially at least, offer solutions after which we have yearned for so long. When there is so much left to be done, it is hard to admit that we have progressed. Yet the efforts we have made to improve the quality of girls' education — and the quality of girls' lives — have made a difference. We have been less successful in altering the beliefs and behaviour of men and boys, and to me it is here, in this terrain that is much more difficult, that our most challenging work remains to be done. This is yet another argument for keeping the energy and presence of our daughters, their parents, and their teachers within the schools we have. If we pull away our bravest girls, our most demanding parents, and our most progressive teachers from "ordinary" classrooms, who will maintain the pressure to insist that all schools change, and especially the boys and men within them? Our solution to improving the education of girls cannot be at the expense of democratic and inclusive values no matter the level of our frustration. Our task is to transfer the practices that nurture girls to classrooms that can nurture everyone.

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ASSESSING Strategies

Good Reform/Bad Reform

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We define good and bad strategies for educational reform in terms of whether they are likely, directly or indirectly, to improve learning and achievement of all students. It is not a matter of intention since virtually all reformers say that they are committed to improving the system. We know a great deal about the reform process and it is this experience and knowledge we should look to in order to assess the extent to which particular strategies have merit, and whether they can be strengthened.

We first talk about what a good strategy encompasses. Second, we show why the normal political process has built-in blinders which make it less likely that successful processes will be thought about, let alone embraced. We conclude with a call to keep the vision of "good reform strategies" front and centre while we pursue complex educational reforms.

What is a good strategy?

Schorr (1997) conducted a massive review of large-scale social policy programs in order to discover what characterized those programs that succeeded. The result is a list of "Seven Attributes of Highly Effective Programs":

Successful programs are comprehensive, flexible, responsive, and persevering ...

Successful programs see children in the context of their families ...

Successful programs deal with families as part of neighborhoods and communities ...

Successful programs have a long-term, preventive orientation, a clear mission, and continue to evolve over time ...
Successful programs are well managed by competent and committed individuals with clearly identifiable skills ...
Staff of successful programs are trained and supported to provide high-quality, responsive services ...
Successful programs operate in settings that encourage practitioners to build strong relationships based on mutual trust and respect ...

In a few words, successful programs focus on comprehensive components of a problem, invest in capacity-building — that is, they work at increasing the ability of systems and people to do the job — and they stay at it over a period of time. This is a broad, not a short-term, goal. Our own research, like Schorr's, concludes that you cannot achieve improvement without attending deeply to capacity-building strategies.

Built-in Blinders

If we know so much about what successful programs look like, why don't governments lead the change to produce more of them? The answer is that the world of politicians has built-in tendencies that make it unlikely, even unnatural, for politicians to follow the right course through to successful implementation.

Micklethwait and Wooldridge (1996, p. 294) remind us of two problems that plague public policymaking. The first is that the state is an incredibly blunt instrument; it gets hold of one overarching idea and imposes it without any sensitivity to the local context. The second is the desperate craving of politicians for a magical solution. The magical solution vulnerability is related to another often fatal flaw which is the short-term time perspective of politicians. Capacity-building takes time, more time than the four or five year cycle until the next election. Even if we attribute the best of motives (wanting to do good in the shortest possible time versus doing things just to get elected), the tendency is to seek more visible short-term solutions. Thus governments become preoccupied with "getting the policy on the books," focussing largely on structural changes and formal requirements.

Bill 160 is a classic example of wrong-headed reform — assuming that improvement of the system, including student learning, is the main goal. The strategy per se, as reflected in the content of the Bill, is all about structure, power, and money. There is little reference in the Bill to anything remotely concerned with the capacity-building characteristics cited by Schorr above.

As a result two things happen. First, since capacity-building really requires a strong vision of why it is crucial and a corresponding set of specific strategies, there is virtually no chance that anything significant will happen in this domain — that is, there is no chance that the policy will produce good results. Second, people know a bad strategy when they see one. They may suspend judgment if the government is at the beginning of its term, but before long they know that it is all structure and no substance. They know that no good can come of it. They become alienated and uncommitted. In short, capacity to implement actually decreases, precisely the opposite to what is needed.

Getting Good Reform Strategies

We believe it is possible to reconcile good reform strategies and good politics. For one thing, it is clear that accountability and capacity-building can (and must) go hand in hand. Successful school reform combines strong and inspiring external standards with equally strong school and community based collaboration (Newmann & Wehlage, 1995). Thus, governments can combine "pressure and support" in setting out high expectations along with stimulating people's motivation and capacity to meet these expectations. More about this in a moment.

Second, reform strategies often fail because they are piecemeal, attaching only one part of a set of factors that must converge. Focusing, for example, only on tests, standards, and the like leaves out several key components. The inevitable result is that teachers experience reform as fragmented, lacking coherence and meaning.

In Ontario, we have a chance over the next decade to zero-in on good strategies of educational renewal which interrelate

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the main components in a pressure and support scenario.

The components that must be combined include:

- Identification of standards for learning keyed to compelling curriculum frameworks. This will require the Education Quality and Accountability Office (EQAO) to work closely with the Ministry of Education and Training's curriculum branch.
- A corresponding framework of standards for beginning and continuing teachers. This will require the Ontario College of Teachers to work closely with its various partners such as faculties of education, schools boards, and EQAO.
- Short-based and broad-based strategies to develop collaborative work cultures where teachers focus on improving their teaching methods, using new knowledge to alter their teaching to get better results. This should be a priority of the newly formed Boards of Education (as of January 1st, 1998, the number of school boards in Ontario was reduced from 129 to 72).
- Teamwork at the school level where groups of teachers work with cohorts of students, focusing on how well they are doing as measured by student performance data, and what they must do to act on performance data to do even better. The leadership role of principals and teacher leaders will be critical here.
- Close work with parents and the community to establish partnerships for learning. Again, it is essential to avoid the trap that formal structures, such as school councils, will be sufficient. As before, it is only when one increases the capacity of parents/community to play a more active role that one should expect any results.
- Launch serious early childhood programs to support the development of preschool children in the under 3 age bracket. This will save countless dollars later as well as get better results.

In this brief article, we have only scratched the surface (for more detail see Hargreaves & Fullan, 1998; Hannay & Ross, 1997). It is going to be extremely difficult to move ahead because the main partners are either alienated or wary as a result of Bill 160 and other recent experiences. The group of 72 districts represents a new constituency to focus effort on standards and capacity-building, but it will require an enormous effort to establish bonds of trust between the districts and the Ministry of Education and Training.

Similarly, teacher unions and everyday teachers have been increasingly demoralized. It seems obvious, but still necessary to say, that you cannot have a good reform strategy if teachers are not motivated to participate. New unionism must also play a part here in which teacher federation leaders put forward reforms that encompass standards and capacity to meet standards.

The public — parents, citizens, business and labour leaders — are poised to play a greater role as well. Improvement of the public education system is at the top of the opinion polls — ahead of health, jobs, the economy. Capacity-building policies which are clear, compelling, and serious in intent could find a natural constituency in the public for the foreseeable future if they capture the public's interest.

We can't help thinking that governments who treat elections as referenda that give them short term blank cheques are bound to fail politically (Saul, 1997). Piling on massive, top-down structural reforms in a compressed time frame only makes matters worse. By contrast, governments that think of themselves as long lasting companies are more likely to invest in capacity-building, are more likely to contribute to the future, and may actually be more likely to get re-elected.

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TEACHING CONFLICT RESOLUTION ACROSS THE CURRICULUM

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Like violence, nonviolence is learned behaviour. It can be taught. Young people learn about managing conflict in classroom lessons, and also in "implicit curriculum" that includes student activities, school governance, involvement in political events, and discipline practices. For example, students may learn about conflict resolution by serving on a student government committee, about power and problem-solving by contributing to a service project, or about peacemaking by serving as peer facilitators or conflict mediators. In schools, young people may develop:

- understandings of conflict and its consequences
- skills in nurturing healthy relationships with people like and unlike themselves
- capacity to navigate the workings of power in social and political systems
- inclinations to use a repertoire of conflict resolution (peacemaking) processes

This article discusses the range of ways we can teach about conflict, and nonviolent responses, in our schools.

Implicit Curriculum about Conflict: School Discipline and Student Participation

Deeds speak more loudly than words: Children learn about conflict by observing the ways that conflict or violent incidents are handled (and by whom), and by practising particular roles in relation to conflict management. They learn a great deal from the

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ways they are treated in school.

Discipline practices, for example, may apply or ignore what educators know about good teaching — such as the importance of clear explanations, positive feedback, and guided practice to improve students' skills. If classroom rules are restrictive, rigid, or unexplained, then students may be inclined to subvert or ignore the teacher's goals, especially when not under direct surveillance (Schimmel, 1997). Various teachers wield different types of authority in relation to students and their conflicts — sometimes in ways that facilitate students' development of their own autonomous strategies for handling conflict and preventing violence, and sometimes (unfortunately) in ways that reward dumb obedience. Thus students learn implicit lessons about conflict and self-discipline. They may internalize messages that marginalize (or accept) conflict, that blame (or respect) individuals for confronting problems, and that assume conflict must be managed by powerful authorities (or by ordinary citizens).

Where students' liberty to participate in positive ways is curtailed, their opportunities to learn conflict resolution are thereby limited. School discipline policies often implicitly target males — especially minority males — because data on visible school violence, vandalism, and suspension often highlight these populations (Noguera, 1995; Slee, 1995). Problems that are less directly disruptive, such as absence or non-participation in school activities, involve a wider range of students but are often ignored. Similarly, conflicts that contribute to girls' absence, such as sexual harassment or bullying, are often relatively less noticed by school personnel (Bergsgaard, 1997, Stein 1995). Thus, particular students may learn different roles and skills for handling conflict, in relation to the ways they are disciplined.

Conflict management and peer mediation programs are spreading rapidly, in part because the public demands that schools "do something" about school violence. Many participants are enthusiastic about the positive program effects they have experienced (Emmerson, 1997, Glass 1994, Lawton 1994). The strongest well-documented effects of these programs have been, not surprisingly, on the most direct and frequent participants, especially the students selected to be conflict mediators (Bickmore, 1997b). The evidence indicates that intensive instruction and practice in conflict resolution processes can have profoundly positive effects on those who participate directly and for significant periods of time (Jones, 1998).

Recently, there has been a trend toward moving conflict resolution in from the extra-curricular margins. There are many social skills and conflict resolution curriculum materials, designed to be used by teachers in regular classrooms (e.g., Carruthers et al., 1996; Lantieri & Patti, 1996; Opffer 1997). The goal has been to offer conflict resolution education to more people in every school, over a sustained time frame. These programs develop students' knowledge, inclinations, and skills in what might be called the "basics" of conflict resolution, whether or not any students' roles are expanded to include mediation of peer conflicts in school.

How do educators help diverse students to see themselves as potential actors, not pawns, in peacemaking or handling school community problems? Student service and governance activities, especially when facilitated by skilled adult advocates, help participating students to develop understandings of conflict (Conrad & Hedin, 1977; Howard & Kenney, 1992). For example, student governance and service projects require effective group communication,

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recognition of differing viewpoints, persuasion, identification of shared interests, and invention of problem-solving procedures (Hepburn, 1983). Girls and lower-status students may have little real representation in student governance, if they have had limited opportunities to develop skills and self-confidence; leadership training can reduce such barriers (Stiles, 1986). Other young people are commonly excluded from "extra-curricular" student councils on the basis of lower than average grades. Bringing student leadership activities into the mainstream of school life, by making them part of classroom activity or scheduling meetings into regular school days, gives more students the opportunity to participate in democratic decision-making, and thus to develop understandings of conflict and its resolution. In classroom or school-wide meetings, students apply their concepts of justice to conflicts among their peers: "they practice creating the rules by which they want to live" (Angell, 1996, p. 24).

Explicit Curriculum about Conflict: Pedagogies for Active Participation

The unknown, the controversial, and the problematic are the fuel for good conversation and the sparks that motivate inquiry for learning. Confronting conflicting perspectives in school provides students with opportunities to learn strategies for handling conflict and avoiding violence in their lives (Houser, 1996; Soley, 1996). Open discussion of controversial matters in the classroom helps students to develop interest in the social and political world, capacity for reflective analytical and evaluative thinking, and a sense of efficacy as actors in their own lives (Hahn 1996). Avoidance of conflict, in contrast, distances curriculum from real life, rendering it meaningless.

Conflict education may be infused into academic lessons. For example, students analyze and respond to the conflicts in stories during language lessons, or they learn processes for managing broader political and controversial questions in social studies classes (Bickmore, 1997b; Stevahn, et. al. 1996). Conflict education involves the process of learning as well as the content. Groupwork methods, for example, have become popular: Cooperative learning requires interaction and student initiative, thus provoking conflict and enables students to practice conflict resolution. Comprehensive infusion of cooperation and conflict resolution into both school processes and core curriculum is more likely to yield significant and lasting learning, compared with more limited interventions (Johnson & Johnson, 1996).

Introduction of conflictual questions can bring previously silenced young people into the curricular conversation, giving them the opportunity and the motivation to learn. For example, a Grade 7-8 social studies/English class practised research methods by conducting an observational study, to see whether boys talked or interrupted more than girls in other classrooms in their school. Students found interesting variations among classrooms, but the impact of having opened this question at all was tremendous. The effect on the girls of actually conducting this study was immeasurable. They spoke up passionately throughout our discussions — some for the first time (Schur, 1995, p. 147).

A common way teachers introduce conflict in academic lessons is by initiating debates. These are no doubt motivating, especially for the most aggressive students, but it is challenging to make debates a real opportunity for a wide range of students to learn conflict management. If debates are organized around thoughtful preparation and mutual response, not simply winning, then students who participate actively may learn to listen for big ideas and points of view, to respect opposing opinions, and to communicate persuasively. For example, a social studies/language arts debating society focused on controversial events in Canadian society (McGeown, 1995). In this program, high school students led preparatory discussions with younger students (Grades 3-8), so that all had opportunities to participate and to develop understanding over time. In order for students to learn win-win rather than competitive management of conflict, lessons that begin with debate may require students to switch roles, and eventually to negotiate a mutually acceptable solution (Kreidler, 1990).

An approach that is often broadly participatory and oriented toward conflict resolution is the simulation activity. Simulations can encourage students to develop a complex understanding of war and its costs, as well as to handle more localized problem solving. For example, students may play the roles of historical characters, making decisions regarding Canada's role in the conflict that became the World War II battle of Dieppe (Morton 1986). Alternatively, students may role play members of various interest groups in relation to environmental management conflicts, involving control and use of resources or energy development (Borad & Fagerstrom, 1985; Curow, 1985). Lessons may also introduce students to the workings of institutions designed to prevent violence and its causes, such as non-governmental organizations or the United Nations (Boulding, 1988; Casburn, 1994). Simulation activities typically highlight the interdependent relationships among the conflicting parties, thus students practise cooperation and the creation of sustainable solutions.

Since conflict resolution requires communication skills, language and literature classes are natural places for conflict education. Conflict is intrinsically interesting; thus it gives students reasons to talk and read together, whether in a first or a second language. Many children's stories highlight questions of conflict and its consequences (Easley, 1993). Some young people's literature provides insight into concepts of justice and practice in understanding others' perspectives (Luke & Myers, 1994). Literature that touches upon unresolved human conflicts and unpopular viewpoints risks provoking dissention or even calls for censorship. However, if a teacher has a clear rationale to explain why the risks are worthwhile (i.e., what students are expected to learn) and how diverse students with minority views will be protected, then such lessons can be defended and strengthened (Herzog, 1994; Worthington, 1985). Students also can create texts that handle conflict. For example, a summer literacy program guided adolescents to develop persuasion skills, producing a document addressed to peers that argued why drugs were dangerous (Long et al, 1995). Practice managing conflict can stimulate language development, which is essential for nonviolent conflict resolution.

Conflict and its resolution are also important to mathematical and scientific education. Peer disagreement can help students to articulate their understandings, to clarify underlying concepts, and to re-frame ideas to help peers comprehend (Crumbaugh, 1996). Furthermore, application of math or science to real-life problems (in which there are inevitably disagreements) may help young people to take a measure of control over some of the powerful influences in their lives (Frankenstein, 1987). Application of science and technology to "real life" connects it with its social context, as for example when students examine cases involving conflicts over scientific beliefs (Morishita, 1991). Another approach is to engage students in testing alternative theories for explaining physical phenomena — in relation to the history of science or inductively, based on concrete experimentation and observation (Settlage & Sabik, 1997). Any human endeavour worth learning about involves some conflict.

Oddly enough, one of the more controversial matters to teach about is peace, especially if this involves examining the causes and consequences of particular episodes of political violence. Thoughtful study of "human-initiated, catastrophic events whose legacy we still live" can help young people to understand the dangers of thoughtlessness and to develop understandings that can be applied to preventing future injustices (Eppert et al., 1996, p.19; Avery et al., 1997). Peace education involves connecting the interpersonal to the cross-cultural and international, in order to develop transferable understandings regarding conflict management (Hicks, 1988). Value-laden international material is particularly well-suited to helping students develop their capacity for flexible and independent thought, because it highlights and demystifies multiple perspectives. Problem-posing and peace education first develop awareness of particular instances of conflict, and second learn or create mechanisms for nurturing peaceful social relationships, thus countering the primary causes of violence.

> "SMALLER-SCALE PROGRAMS IN CONFLICT RESOLUTION EDUCATION, WHETHER CURRICULAR OR EXTRA-CURRICULAR PROVIDE SPACES FOR INNOVATION THAT WILL EVENTUALLY INFLUENCE THE CORE SUBJECT-MATTER AND THE REGULAR PROCESSES OF SCHOOLING."

Conclusion

The pursuit of peace is not embodied in any particular curricular or extra-curricular program. Instead, every realm of school life is involved in teaching young people about violence, conflict and peace. Behaviour management patterns and academic curriculum, by virtue of being most of what happens in school, are the main sources of student learning about conflict. These patterns are difficult but not impossible to change. Smaller-scale programs in conflict resolution education, whether curricular or extra-curricular, provide spaces for innovation that will eventually influence the core subject-matter and the regular processes of schooling.

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Toward Universal Scientific Literacy

Derek Hodson

Over the past decade, expressions of public concern about the state of science education have become almost universal, and in some countries have escalated to feelings of crisis. In Canada, these concerns have been fuelled by lamentation over the country's allegedly poor performance in international tests of scientific attainment—no matter that the data show Canadian children performing at least as well as students in the United States or that the tests may not be measuring those things that Canadian science educators have prioritized. The press and politicians of Ontario are even more vociferous in their condemnation of the efforts of science teachers because of data showing that Ontario's children are performing less well than those in the country's western provinces.

Interestingly, while the nature of the crisis, the reasons for it, and the solutions being promulgated, can differ substantially from country to country (or province to province), there are some common elements. Principal among them is the notion that science education is a means of halting economic decline and enhancing a country's competitiveness in the so-called global economy. In outline, the argument is that contemporary society is undergoing rapid and far-reaching economic, sociocultural and technological changes that impact substantially on the way we live, but school science education has failed to respond quickly and effectively. Only by reformulating science education can a satisfactory flow of talented people into science and engineering be achieved and our economy revitalized.

Of course, scientific and technological developments and the increased consumerism that often accompanies them have significant social and environmental impact. Consequently, running alongside the economic argument for the reform of science education are some well-articulated environmental and sociopolitical arguments for a curriculum emphasis on the promotion of responsible environmental behaviour and active citizenship. These arguments broaden considerably the scope of science education and the definition of scientific literacy that underpins it. They also raise questions about whose views of society's economic, social and environmental needs are to count, who has access to science and technology, and how access can be widened in order to ensure scientific literacy for all, regardless of gender, ethnicity, social class, sexual orientation, and geographical location.

> *Developing a more inclusive science curriculum requires that we look closely at what we teach (and why), at how we teach, and at how we assess and evaluate learning.*

What is Scientific Literacy?

Scientific literacy has become established as one of today's slogans or rallying calls, along with the more recent *authentic science*, and is increasingly being used as a substitute term for the goals of science education. Clearly, it comprises more than mastery of a specific set of scientific concepts and theories. But how much more? Despite a decade or more of use in the science education literature, there is no universal agreement about precisely what scientific literacy entails. Some see it as the capacity to read, with reasonable understanding, lay articles about scientific and technological matters published in newspapers and magazines, others regard it as being in possession of the knowledge, skills, and attitudes deemed necessary for a professional scientist. The more ambitious, such as the authors of *Science for All Americans* (AAAS 1989: 4), attempt to include both elements: a scientifically literate person, they say, "is aware that science, mathematics, and technology are interdependent human enterprises with strengths and limitations; understands key concepts and principles of science; is familiar with the natural world and recognizes both its diversity and unity; and uses scientific knowledge and scientific ways of thinking for individual and social purposes." This intriguing document also directs attention toward scientific literacy for a more socially compassionate and environmentally responsible democracy when it states that science can provide knowledge "to develop effective solutions to its global and local problems" and can foster "the kind of intelligent respect for nature that should inform decisions on the uses of technology," without which "we are in danger of recklessly destroying our life-support system."

Regrettably, the authors don't go on to suggest that scientific literacy also includes the capacity and willingness to act in environmentally responsible and socially just ways. This component is also absent from the definition proposed by the Council of Ministers of Education (1997, p. 4) to guide curriculum construction throughout Canada: "scientific literacy is an evolving combination of the science-related attitudes, skills, and knowledge students need to develop inquiry, problem-solving, and

It is particularly disturbing that girls and members of ethnic minority groups are over-represented among those who consistently under-achieve in science.

decision-making abilities, to become lifelong learners, and to maintain a sense of wonder about the world around them."

When it comes to designing curricula, the multi-dimensionality of scientific literacy can be considered in terms of three major elements:

- Learning science—acquiring and developing conceptual and theoretical knowledge
- Learning about science—developing an understanding of the nature and methods of science, an appreciation of its history and development, and an awareness of the complex interactions among science, technology, society and environment
- Doing science—engaging in and developing expertise in scientific inquiry and problem solving

Traditionally, science education has emphasized the learning science goal (sometimes to the exclusion of the other two), though we may not always have made the most judicious selection of content. In more recent years, the STS movement has encouraged teachers and curriculum developers to include some significant aspects of the nature of science and the history of science and technology, and to address some socioeconomic concerns, though as I argue below we have not gone nearly so far as we should in tackling sociopolitical and moral-ethical issues. If anything, the most recent Ontario Science and Technology Curriculum has taken a step backwards. Sadly, most science curricula also remain woefully inadequate in providing students with opportunities to do science for themselves and by themselves.

The Politicization of Science Education

One of the absurdities of some current curriculum initiatives is that they attempt to teach that science is a value-laden activity (the STS emphasis), but try to do so in a value-free way. Many teachers studiously avoid confronting the political interests and social values underlying the scientific and technological practices they teach about, and seek to avoid making judgements about them or influencing students in particular directions. This makes little or no sense.

First, it asks teachers to attempt the impossible. Values are embedded in every aspect of the curriculum: content, teaching and learning methods, assessment and evaluation strategies are selected using criteria that reflect and embody particular value positions, whether we recognize it or not.

Second, it mistakes the very purpose of education in science, which, in my view, is to ensure *critical* scientific and technological literacy for everyone as a means to social reconstruction. Its purpose is to enable future citizens to look critically at the society we have, and the values that sustain it, and to ask what can and should be changed in order to achieve a more socially just democracy and to ensure more environmentally sustainable lifestyles. Hence my view of science education is overtly and unashamedly political. Politicization of science education can be achieved by giving students the opportunity to confront real world issues that have a scientific, technological, or environmental dimension. By grounding content in socially and personally relevant contexts, an issues-based approach can provide the motivation that is absent from current abstract, de-contextualized approaches and can form a base for students to construct understanding that is personally relevant, meaningful and important. My inclination is to provide a mix of local, regional/national, and global issues focusing on: health; food and agriculture; land, water and mineral resources; energy resources and consumption; industry and technology (including biotechnology); information transfer and transportation; freedom and control in science and technology (ethics and social responsibility). As argued elsewhere (Hodson 1994), this kind of issues-based approach can be regarded as comprising four levels of sophistication:

Level 1: Appreciating the societal impact of scientific and technological change, and recognizing that science and technology are, to some extent, culturally determined.

Level 2: Recognizing that decisions about scientific and technological development are taken in pursuit of particular interests, and that benefits accruing to some may be at the expense of others. Recognizing that scientific and technological development is inextricably linked with the distribution of wealth and power.

Level 3: Developing one's own views and establishing one's own underlying value positions.

Level 4: Preparing for and taking action.

A central goal of such a curriculum is to equip students with the capacity and commitment to take appropriate, responsible, and effective action on matters of social, economic, environmental, and moral-ethical concern. However, socially and environmentally responsible behaviour will no more follow directly from knowledge of key concepts than ability to conduct scientific investigations will follow directly from experience of carrying out exercises based on the sub-skills of science. The keys to the translation of knowledge into action are *ownership* and *empowerment*. Those who act are those who have a deep personal understanding of the issues (and their human implications) and feel a personal investment in addressing and solving the problems. Those who act are those who feel personally empowered to effect change, who feel that they can make a difference.

At Level 1, students are encouraged to recognize the societal and environmental impact of science and technology. At Level 2, they are sensitized to the sociopolitical nature of scientific and technological practice. At Level 3, they are encouraged to become committed to the fight to establish more socially just and environmentally sustainable practices. But only by proceeding to Level 4 can we ensure that students acquire the knowledge and skills to intervene effectively in the decision-making processes and ensure that alternative voices, and their underlying interests and values, are brought to bear on policy decisions. What is being argued here, of course, is that education for critical scientific literacy is inextricably linked with education for *political*

literacy and with the ideology of education as social reconstruction. As Kyle (1996: 1) puts it:

> *"Education must be transformed from the passive, technical, and apolitical orientation that is reflective of most students' school-based experiences to an active, critical, and politicized life-long endeavour that transcends the boundaries of classrooms and schools."*

Unfortunately, there are many students who feel disempowered by their experiences in school and are increasingly alienated from science. There are many who feel no sense of ownership and certainly no feelings of empowerment, and who continue to regard science as a body of fixed, authoritative knowledge located in textbooks. It is to these matters that I now turn.

Problems of Access

For me, a major element of the crisis in science education concerns restricted access. In some countries, access to significant science education is limited to the academically elite, and if selection is early this usually means the socially and economically advantaged. While the most recent Ontario curriculum document dispenses with the traditional curriculum differentiation into *three* secondary school science courses—basic, general and advanced—it now specifies *four* levels of anticipated achievement, identifies achievement at Level 3 as "the provincial standard," and states that some students will not reach it. If critical scientific literacy is a crucial aspect of responsible citizenship and sound environmental behaviour, it is essential for everyone. Those who leave school scientifically illiterate are essentially disempowered. Worse, they are predisposed to succumb to the blandishments of advertizers to act in ever more consumptive and polluting ways in pursuit of essentially trivial consumer goods.

Some students already believe that school is a waste of time: it confines them against their will in physically unattractive surroundings, imposes on them a code of conduct that is unfamiliar and unwelcome, and often denies them any measure of choice and self-determination about what and how they study. To compound matters, these already disenchanted students are presented with a science curriculum that they regard as remote from real life. Even if they make the effort to learn science, they are presented almost daily with unappealing messages about the nature of science and scientific practice. Science is presented as complex and difficult, and so only accessible to "experts" who have subjected themselves to a long and arduous training. Scientists are often portrayed as dispassionate and disinterested experimenters, who painstakingly reveal the truth about the world. Frequently, scientific knowledge is delivered as established and certain knowledge that is not to be challenged or doubted by mere students. Moreover, it is presented in unfamiliar and depersonalized language. For many students, all this constitutes such a formidable barrier that they are unable to make satisfactory progress. Many are dissuaded from further study and merely "mark time" until they can give up science altogether. It is particularly disturbing that girls and members of ethnic minority groups are over-represented among those who consistently under-achieve in science or terminate their science education at the earliest opportunity.

Clearly, it is a matter of some urgency that ways are found to make science more accessible. Developing a more inclusive science curriculum requires that we look closely at what we teach (and why), at how we teach, and at how we assess and evaluate learning. To enable *all* students to achieve critical scientific literacy, we must pay much closer attention to the transitions from everyday understanding to scientific ways of understanding and from everyday ways of communicating to scientific ways of talking and arguing. Increasing access and participation levels also entails paying much more attention to the specific barriers and obstacles experienced by individuals, many of them related to ethnicity, gender and social class. This means addressing the inherent biases of science and science education, creating a more authentic, culturally sensitive and inclusive image of science, scientists and scientific practice, showing science being used and developed by diverse people in diverse situations, and establishing and maintaining a school science environment in which all students feel a sense of comfort and belonging.

At present, many students in science lessons are bored by content they consider irrelevant to their needs, interests, and aspirations. They are uninvolved by the kinds of teaching/learning methods we employ and they find the social and emotional climate of the science classroom uninviting, or even alienating. Some of those who do engage in effective science learning do so at considerable social and emotional cost, sometimes resulting in disaffection, exclusion, or ostracization from peers and family.

In my view, critical scientific literacy for an increasingly diverse student population can only be achieved by the *personalization* of learning, by developing an education that looks not only to the students' cognitive development but also to their emotional, aesthetic, moral and spiritual needs (see Hodson, 1998). Personalization of learning means ensuring:

- ➢ Learning takes account of the knowledge, beliefs, values, attitudes, aspirations and personal experiences of individual students
- ➢ Science and technology are presented as more person-oriented and science/technology education is politicized and infused with sound social and environmental values
- ➢ Every student has the opportunity to conduct authentic scientific investigations and to engage in technological problem-solving tasks of their own choosing and their own design.

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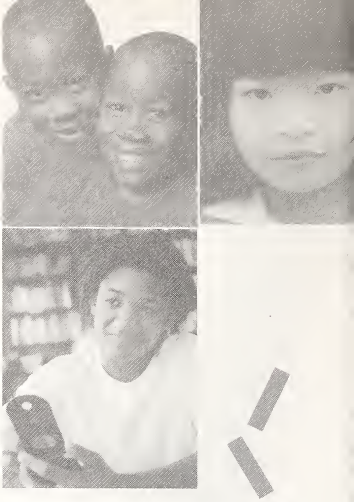
Communicating Across the Tracks:

Challenges for Anti-Racist Educators in Ontario Today

George J. Sefa Dei



> All oppressions have certain things in common. They operate within structures, are intended to establish material advantage, and create an "Othering" process between the self and the other.

As an educator and community worker I have tremendous respect for every school teacher and educational practitioner in this province. Like many, I want to share in the love and the successes of teaching. But in order to build on our success, it is important that we maintain a "critical gaze" on our work—otherwise we won't come to understand why, despite our good intentions, we continue to see in the faces of many minority parents and students a concern about schooling. The educator in Ontario today has a responsibility to address these concerns especially as the government appears to have abandoned its obligations to its diverse population.

CATCHING UP TO THE DEMOGRAPHICS

Countless number of studies point to Canada's multiracial and multiethnic diversity, particularly in urban centres (see Canadian Council on Social Development, 2002; Galabuzi, 2001; Ornstein, 2000). New data from the Canada Census, reported in the *Toronto Star*, show that 4 in every 10 people in Toronto have neither English nor French as their first language. Within the public high school system, over one-third of students are born in approximately 174 countries outside of Canada; over 52% of high school students and 47% of elementary school students speak a mother tongue other than English (see Carey, 2002, p. A3). TDSB numbers show almost 1 in 3 students live in poverty, 1 in 10 are gay, lesbian, bisexual or transgendered, and 1 in 10 have an identified physical, psychological, or learning disability (Speakout4@hotmail.com, 2003).

> *. . . educators must begin to understand their students through the lens of race as a salient point in their myriad identities. . .*

These differences in the student population must be considered in the broader context of differential academic performance and schooling experiences of students. For example, research on education and performance shows the severity of issues for certain student bodies. Despite the successes, Black/African-Canadians, First Nations/Aboriginals, and Portuguese Canadians have higher drop-out rates than the general student population. Research in the 1990s revealed that in very disproportionate numbers students from these groups are enrolled in special education and non-university stream programs (see Brown, 1993; Cheng, Yau & Ziegler, 1993; Brathwaite & James, 1996; Dei, Mazzuca, McIsaac, & Zine, 1997; Cheng & Yau, 1999). Beyond the figures there is a human dimension to the story of minority youth's disengagement from school.

HELPING MINORITY STUDENTS

Anti-racist education is proactive educational practice intended to address all forms of racism and the intersections of social difference (race, class, gender, sexuality, and disability). Anti-racism is more than a discourse. It is a form of education that makes very explicit the intended outcomes to subvert the status quo and bring about change. It is political education whose credibility rests in action.

Anti-racism highlights the material and experiential realities of minorities in dealing with the school system. A key tenet is that educators must begin to understand their students through the lens of race as a salient part of their myriad identities. But in fact, the serious consequences of race are often denied both because racism is an unsettling issue for most Canadians and because it is a very complex concept. Just as seeing one's identity in terms of race can be oppressive, the denial of race also constitutes an oppressive act (see Taylor, 1994, p. 25). We must be careful that our use of the concept is not rigid or monolithic. We must work with ambivalence, contention, conflict, and conjunction around the term of race. But we cannot afford to be immobilized by this complexity and say, "Let us discard race, because it is meaningless." Race has powerful material, political, symbolic and spiritual consequences, and it serves no purpose to those who are disadvantaged by race to deny its salience.

I do not underestimate the daunting challenge of ensuring that genuine educational reform addresses questions of equity and justice. As a student teacher noted when speaking about obstacles at his school, "The sheer volume leaves administrators floundering in paperwork rather than focussing on school community, and real leadership for social change and educational justice."

However, I believe there are many levels of doing anti-racist work. Asking critical questions is a start. For example, why do we see magnificent new public schools with state of the art science labs and banks of computers in wealthy suburban areas and not in the inner cities or low income neighbourhoods? Why are we creating a two-tier system in our communities?

Another place to start anti-racist work is by assuring all students that they are welcome in the class and that each has the right and the responsibility to have a voice that must be heard. Learning happens from developing humility for each other's knowledge and appreciating the student's contributions. The fear of not meeting expectations and/or failing is genuine, collectively shared, and must be addressed in a highly competitive society. A teacher can start in the classroom by letting students know through the humility of teaching practice that if learners are humble in their claim to know they will always leave a classroom setting knowing more than they came in with.

ANTI-RACISM POLICY IN ONTARIO, PAST AND PRESENT

We can trace the history of anti-racism policy in Ontario to the Yonge Street Riots of May 1992 when the then NDP government commissioned the Stephen Lewis report. Lewis correctly identified the problem as "anti-Black racism" although there were class and gender dimensions to the disturbance. Many of the report's recommendations dealt with the police (see Lewis, 1992). The report called for the reconstitution of the Race Relations and Policing Task Force to assess the status and current implementation of recommendations that had been made over the years. It also recommended a systematic audit of Police Race Relations policies across the province. There was a recommendation for a strengthened Police Complaints Commissioner and Special Investigations Unit, a requirement that police file reports whenever guns were drawn. The report also specifically asked for beefed-up race relations training and an investigation into racism in other aspects of the criminal justice system, including the judiciary and detention centres.

At the school board level, one could briefly applaud the fact that the Policy/Program Memorandum No. 119 is still in place.

It is worth noting that the Stephen Lewis report acknowledged the government's "disappointing" record on employment equity and recommended the passage of employment equity legislation without delay. The report called for the upgrading of the Ontario Anti-Racism Secretariat, the establishment of a Cabinet Committee on Race Relations to meet with representatives of visible minority communities at least four times a year, and funding for community development projects to deal with health, social service and employment problems faced by minority communities. To its credit, the NDP government moved on a number of the recommendations.

In the specific area of education the government issued a policy directive, Policy/Program Memorandum No. 119, "Development and Implementation of School Board Policies on Anti-Racism and Ethnocultural Equity" which required all boards to develop a race relations policy and outlined the parameters of these policies. All policies were to be vetted by the Race and Ethnocultural Equity Unit within the Ontario Ministry of Education and Training. In fact, after the Tories took over, this particular legislation was one of the few pieces of NDP legislation that was not repealed and eventually served as the basis for the TDSB equity policy. In later years, the policy was expanded to cover other aspects like anti-homophobia, socio-economic status, gender, and disability through an anti-oppression prism (see Toronto District School Board, 2000). The NDP also passed employment equity legislation and as large employers all school boards were expected to develop goals and timetables for the hiring and promotion of visible/racial minorities, women, Aboriginals, and the disabled. Most boards abandoned these efforts when the Tories repealed the legislation in 1995. Since 1995 there has been a gradual decline of anti-racism initiatives at government/ministerial levels in Ontario.

Changes in internal governmental structures may provide a useful reference point for discussion of the history of anti-racism in Ontario. Just as the Ontario Anti-Racism Secretariat was dismantled soon after the election in 1995, the Anti-Racism, Access and Equity Division in the Ministry of Education and Training ceased to exist. An Anti-Racism and Equal Opportunity Branch was put in place briefly within the Elementary/Secondary Operations & French Language Education Division. In a later reorganization, the Division was removed. In fact, in terms of concrete achievements it is not an overstatement to say that the entire Anti-Racism and Equal Opportunity Branch has not survived past 1997.

At the school board level, one could briefly applaud the fact that the Policy/Program Memorandum No. 119 is still in place. But it is difficult to assess what this memorandum has accomplished in practice and what effects it continues to have (if any) in the current climate. By and large the policy has been toothless except, perhaps, in individual cases where school boards have strong commitments to anti-racism.

But one cannot say all is lost. For example, the inquiry of the Ontario Human Rights Commission into racial profiling and the discussion paper it released September, 2002 on an intersectional approach to discrimination may hold some promise for change. Regarding racial profiling, it is quite possible that some court decisions which acknowledge systemic racism are going to compel anti-racism efforts. The Board's court decision may be significant because it references the Report of the Commission on Systemic Racism in the Ontario Criminal Justice System, a commission established by the NDP government.

Within North American society, race demarcates life chances more profoundly than any other form of difference.

ENTRY POINTS FOR ANTI-RACIST WORK

For the classroom teacher, an "entry point" for anti-racist work is one's personal experience. For example, an anti-racist would ask: How do some whites perpetuate racism and employ a powerful racist ideology without ever feeling that they have abandoned the liberal democratic ideals and values of social justice for all? It is important to note that not all whites are indicted here as racists; however, there needs to be a recognition of how one is helped or hindered by such a system. Starting with the self means the white anti-racist educator must acknowledge his or her dominance and allow other whites to see their privilege by virtue of a white identity.

All oppressions have certain things in common. They operate within structures, are intended to establish material advantage, and create an "Othering" process between the self and the other. Nevertheless, oppressions are not equal since they differ in their consequences. A rethinking of anti-racist practice requires that we work with the idea of situational and contextual variations in intensities of oppressions. It also requires a recognition of the relative saliencies of different identities. For example, while all students may have to contend with the problem of school disengagement, we know that the problem of "dropping out" from school is more acute among First Nations/Aboriginal, African-Canadian, and Portuguese students. We also know that within North American society race demarcates life chances more profoundly than any other form of difference. In effect, in a highly racialized society, anti-racism must a work with the ideas of both severity and saliency of different oppressions.

Rethinking anti-racism is also to become aware of the dangers of the mere acknowledging of difference without responding to difference. For example, it is important for an educator not simply to note that there are differences but to ask about what it means to respond to these differences. Responding to difference may mean acting to address inequities. In this practice we cannot simply collapse anti-racist work into the "human/social relations" paradigm (e.g., liberal notion of "social justice for all"). Embedded in this is the danger of equating oppressions in the undifferentiated notion of sameness. Effective anti-racist work requires that in dealing with the multiple oppressions and their intersections we simultaneously acknowledge the severity of certain forms of oppression.

Similarly, a rethinking of anti-racist discourse entails developing an ability to name "race" and "privilege." Naming is always the first act of colonization. The power to name oneself and self-define is also a form of resistance and part of the process of decolonization of the mind and soul. In order to deal with race and difference we must be able to speak about race and not avoid it. For example, as argued earlier, educators cannot simply wish race away.

Working with allies and building coalitions in progressive politics at school sites is always welcome provided the issues of power are addressed within these movements. Anti-racist educators must be careful about the intellectual and political paralysis of labouring in "parallel tracks" rather than communicating "across tracks," while also noting that the collective quest for solidarity in anti-oppression work can mask some underlying tensions and ambivalences.

ASKING NEW QUESTIONS

Schools have a responsibility to help students make sense of their identities, to build the confidence of all students, and remove the fear of conforming to lowered expectations. It is also important for an educator to know that the needs of students extend beyond the material to emotional, social, and psychological concerns. To assist society in dealing with these issues educators cannot extend a helping hand from a distance. We must assist all students to "come to voice," to challenge the normalized order of things and, in particular, the constitution of dominance in Western knowledge production. The prevailing notions of "reason," "normalcy," and "truth" are essential to the structuring of asymmetrical power relations in Euro-Canadian society.

The individuation of school success or failure allows some educators to see homes, families, and communities as the sources of schooling problems instead of critically examining what schools do or fail to do in enhancing and supporting academic excellence for all students. We fail to examine how the principle of meritocracy itself can be a way of denying the access to institutions by certain groups. What constitutes merit is culturally, ideologically, and politically defined, as well as context bound. Unfortunately this observation is vehemently denied or challenged by a large segment of our society. In fact, this critique does not mean we abandon merit or standards. What it means is a critical examination of what has conventionally stood for merit, meritocracy, excellence, and particularly how our definitions have excluded other ways of knowing or doing things. By working with limited definitions and understandings, we all contribute to limit the chances and ability of disadvantaged groups to participate in and obtain a fair share of the valued social and economic goods of society.

There must be more to success at school than grade point averages, test scores, and placement in higher level classes. Academic success must be coupled with social success to produce excellence broadly defined. For anti-racist educators the question is how do we ensure that such excellence is not simply accessible but also equitable? Excellence emerges from our diversity and from addressing the issues of equity. For many students, particularly minority youth, the fear of failing school emerges from the idea and practice of "thinking in hierarchies" rather than "thinking in circles." Thinking in circles is valuing each other's contributions. The establishment of intellectual hierarchies has worked to abrogate "knowing" to certain segments of our popula-

tion and there is a pressure to perform to meet expectations. The fear of failure is rife and it avoids a critical examination of the ways we produce and validate knowledge. Anti-racism destabilizes this thinking and argues for acknowledging strength and power in difference and diversity.

All students learn from their peers who are different from themselves and it is this knowledge that creates excellence. It is such knowledge that can compel action. But in order for such excellence to be equitable there must be opportunities for all students to have access to schooling, education, and knowledge. No one must be left outside the school door. This places a huge obligation on teachers to ensure that their knowledges reach all students, that they do not simply avoid problems by creating artificial boundaries between schools and communities and not pathologize local/minoritized communities in accounting for student failures while schools take credit for the success of students. Racial minority communities, despite conventional assertions, have high aspirations for their children's success at school and make the effort to ensure such success. Like other parents, they care deeply about their children's academic achievement. It is problematic, for example, to infer that because some minoritized students may lag behind in homework completion these students are not interested in school. Critical anti-racist education would shift the gaze on to the schools themselves (of course, not in isolation from the communities), and argue that the processes of schooling, the distribution of available educational resources (human and material), teacher expectations, and the economics of schooling are cardinal to students' success.

The power to name oneself and self-define is also a form of resistance and part of the process of decolonization of the mind and soul.

SUSTAINING OURSELVES

I agree we cannot be politically paralyzed or immobilized by the daunting task of ensuring change. But we must sustain ourselves emotionally, spiritually, and materially if anti-racist practice is to go ahead. So, for me, the key question today is not really to ask who can do anti-racist work. Rather it is for each of us to ask whether we are prepared to face the risks and consequences that come with doing such work. For it is going to get even nastier and harsher.

There is the emotional and psychological harm, and the "spirit injury" to constantly confront racism. But we must be bold to face and address the risks and the injuries so that we are always whole and healed when we pursue anti-racist work. Traditionally anti-racist workers have not shied away from bringing passion and emotion to our work. What is needed now is an articulation of our individual and collective sense of spirituality that will help heal and rejuvenate the soul as we continue to pursue anti-racism. Situating spiritual knowing into anti-racist practice should itself be seen as a form of resistance to both the continued damage of our souls but also to the dominant ways of constructing knowledge about ourselves and our communities.

The mandate of anti-racist education, while affirming the salience of cultural diversity with the official Canadian policy of multiculturalism, is also to strive for conditions of equity and excellence for all students. In this era of conservative educational and fiscal policies in Ontario, the challenge becomes one of transgressing a system of differential rewards and punishments. In so doing, the masks of standardization and centralization of educational autonomy may be revealed as sources of inequity and denied excellence for our students and school communities.

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GEORGE J. SEFA DEI is Guest Editor of this *Orbit* issue with Njoki Wane.

Transformational Leadership for Challenging Schools

Kenneth Leithwood

> There are, to my knowledge, no recorded examples of schools which have been turned around in the absence of good leadership. Nor do I know of any published reports of schools achieving better than expected results with students from diverse and disadvantaged backgrounds without such leadership.

Leadership is not so much a stand-alone function as a catalyst for other functions. To be successful schools must develop a clear sense of purpose, strong commitments on the part of their staffs, and productive working relationships with their communities. All of these things are hard to come by without good leadership.

So what is leadership and how do we distinguish the good from the not so good variety? Most conceptions of leadership associate it with productive change. And at the core of most of these conceptions are two functions generally considered indispensable to the meaning of leadership; each can be carried out in different ways and more or less effectively:

- *Direction-setting:* Helping members of the organization establish a widely agreed on direction or set of purposes considered valuable for the organization
- *Influence:* Encouraging organizational members to act in ways that seem helpful in moving toward the agreed on directions or purposes.

As to the meaning of "good" leadership, three insights from recent research (Leithwood, et al., 2004) provide useful starting points:

- *Leadership effects are usually largest where they are needed most.* So in the case of especially challenging schools, or schools that may be turnaround candidates, leadership will figure very strongly in their potential for improvement. With mediocre or frequently changing leadership, the learning of students will continue to be weak. With good and stable leadership, especially challenging schools stand a reasonable chance of significantly improving such learning.
- *Good leadership responds to unique features found in every organization.* As a simple example, good leaders of small schools typically develop productive relationships directly with individual students because they know that such relationships go a long way towards ensuring students' engagement with school. This is difficult to do for principals of very large schools. Good leaders also are responsive to the unique contexts faced by their organizations and the inevitable menu of changing demands and circumstances emerging from those contexts. Flexibility is a pre-requisite for good leadership (Yukl & Lepsinger, 2004).
- *Although good leaders adapt to and build on the unique features of their organizations, there are a common core of successful leadership practices* ("the basics") that all good leaders master. Flexibility entails adapting these core practices to the unique circumstances in which leaders find themselves.

The "basics" are most closely associated with transformational approaches to leadership. These basic practices have demonstrable value in education and other kinds of organizations, in especially challenging and not so challenging schools, and in national cultures as diverse as Canada, the Netherlands, the United States, Hong Kong, and Tanzania (e.g., Yu, Leithwood & Jantzi, 2002; Geijsel et al, 2003). There are three sets of such practices:

> Leadership effects are usually largest where they are needed most.

> One of the most important functions of leadership is helping stakeholders develop shared understandings about organizational visions, purposes, and values.

1. SETTING DIRECTIONS

One of the most important functions of leadership is helping stakeholders develop shared understandings about organizational visions, purposes, and values. People are motivated by purposes which they find personally compelling, morally defensible, and challenging but achievable. Having such share purposes helps people find meaning in their work and creates a sense of identity within the work context.

Helping set directions are such specific practices as identifying and articulating a vision, fostering the acceptance of group goals, and creating high performance expectations. Monitoring organizational performance and promoting effective communication also help build a common sense of purpose.

2. DEVELOPING PEOPLE

While clear and compelling organizational directions contribute significantly to members' work-related motivations, they are not the only conditions to do so. Nor do such directions contribute to the capacities members often need in order to productively move in those directions. Such capacities and motivations are influenced by the direct experiences organizational members have with those in leadership roles, as well as the organizational context within which people work.

The ability to engage in such practices depends, in part, on leaders' knowledge of the "technical core" of schooling—what is required to improve the quality of teaching and learning. But this ability also is part of leaders' emotional intelligence. Such intelligence displayed, for example, through the personal attention devoted to a colleague and the use of the colleague's capacities increases levels of enthusiasm and optimism, reduces frustration, transmits a sense of mission, and indirectly increases performance (McColl-Kennedy & Anderson, 2002). Modelling key values and practices, offering intellectual stimulation, and providing individualized support all help develop people.

3. REDESIGNING THE ORGANIZATION

Successful leaders create conditions which build and sustain the performance of both staff and students. This category of practices builds on recent evidence about organizational learning in schools, professional learning communities, and their contribution to teachers' work and to student learning. Such practices assume that the purpose behind organizational cultures and structures is to facilitate work and that the malleability of structures should match the changing nature of the school's improvement agenda.

Specific practices typically associated with this category include strengthening district and school cultures, and modifying organizational structures to foster collaborative processes Also part of this category is the ongoing refinement of both routine (e.g., school improvement planning processes) and non-routine administrative processes (e.g., buffering teachers from excessive and distracting demands on their attention, and celebrating successes and accomplishments).

Turning Schools Around Using Transformational Leadership

Especially challenging schools and those in need of being turned around require adaptation of "basic" leadership practices, as well as judicious additions to such practices. One form such adaptation takes can be illustrated in relation to four common tasks facing leaders of challenging or turn-around schools.

1. CREATING STABILITY

Change is possible without stability but improvement is not. Indeed, by definition, unstable schools are in a constant state of change. But much of that change is unanticipated and often quite dysfunctional. Improvement, in contrast, requires a foundation which allows for the effects of a series of typically modest but successful interventions to accumulate over time until they amount to noticeable gains in students' learning. Stable school leadership is a crucial ingredient in such accumulation and this requires coherent district transfer policies and practices.

For many schools that have been successfully turned around, another key element of stability is the creation of environments in which both teachers and students feel physically and psychologically safe. This can be done, for example, by establishing routines to monitor and control access to the school by outsiders, reconstructing the physical space in the school to make it harder for non-members of the school community to get into the building, and closely monitoring the common spaces in the school by being a visible presence in those spaces at strategic times during the day. With security comes a willingness to attend to the core purposes of the school—teaching and learning. This is part of what "redesigning the organization" entails in unstable organizations.

2. CLARIFYING THE ACADEMIC MISSION

With the security of students and teachers looked after, successful leaders turn to the academic mission of the school drawing heavily on the direction-setting practices associated with transformational leadership. Although "all kids can learn" has become a common mantra for policy makers these days, it is a belief that is more difficult to actually internalize the closer you are to being the person—usually the teacher—accountable for seeing that it happens.

But the internalization of this belief is quite central to the mission that most struggling schools need to adopt. Successful

> … knowing your individual colleagues well, understanding their own work-related motivations, being empathetic to their aspirations and generally displaying a modicum of emotional intelligence are important leadership qualities.

leaders provide their more skeptical colleagues with ample evidence that students typically "at risk" can experience substantial success under the right conditions. Through advocacy for appropriate programs, for example, leaders can help their colleagues understand the more specific goals the school will need to work toward, in the short term, if their long term vision for the school is to be achieved. These leaders also hold high expectations for themselves, their teacher-colleagues, as well as students and parents; they insist that everyone be held accountable for their part of what needs to be done if student learning is to improve.

3. BUILDING COMMITMENT AND CAPACITY

Commitment (or motivation) and capacity are qualities of staff and students to be pursued in tandem. Few people become highly motivated to do things they are not good at. Conversely, it is amazing how motivated people can become to do things at which they are skilled. But at least minimal commitment is needed to get started. And this is why knowing your individual colleagues well, understanding their own work-related motivations, being empathetic to their aspirations and generally displaying a modicum of emotional intelligence are important leadership qualities. They are part of "helping people," providing them with individualized support.

We know that a rich curriculum and top notch instruction is critical if struggling students are to succeed. To that end, providing intellectual stimulation formally through professional development opportunities and informally by modeling appropriate values and practices are key leadership practices. Having staff members visit other challenging schools whose students are achieving beyond expectation can be a powerful source of motivation, as well as a useful experience for building capacity.

4. SUSTAINING AN UPWARD TRAJECTORY

Rare indeed, for leaders, is an especially challenging school in which everyone agrees with the initial direction to be taken for improvement. Such schools with an improvement agenda are in a hurry and resistance arises because the speed with which decisions and actions must be taken constrains opportunities for wide participation and prolonged consultation. Resistance also can be expected from staff members who view improvement initiatives as an affront to their sense of professional efficacy. Good leaders first try to understand and respond to the concerns of those who resist. But if this is unsuccessful, they help reluctant staff find other schools in which to work. Done much more frequently than is commonly thought, this is a quite fundamental redesign of the organization.

An upward trajectory also depends on continuing learning and problem solving by staff. Redesigning the organization so that such learning is encouraged and supported means building a collaborative professional culture in the school and creating structures to allow for such collaboration. Professional learning is also fostered by building relationships with families and communities that result in better information about students for staff to work with and better information about school curricula for parents to work with.

Conclusion

The transformational leadership practices described here should be considered "necessary but not sufficient" for helping especially challenging schools improve the learning of their students. Some circumstances may demand more of leaders, so more than the basics are necessary for success. But not less.

NOTE

Many of the specific adaptations described here are drawn from Riehl (in press), Leithwood & Steinbach (2003), and Jacobson (2004).

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